

## SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)

# Model Framework for Trading Licence Regime and Guidelines for grant of trading licence to facilitate Cross Border Electricity Trade in South Asia Region.



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**Model Framework for Trading  
Licence Regime and Guidelines  
for grant of trading licence to  
facilitate Cross Border Electricity  
Trade in South Asia Region.**

Integrated Research and Action for Development (IRADe)  
December 2017

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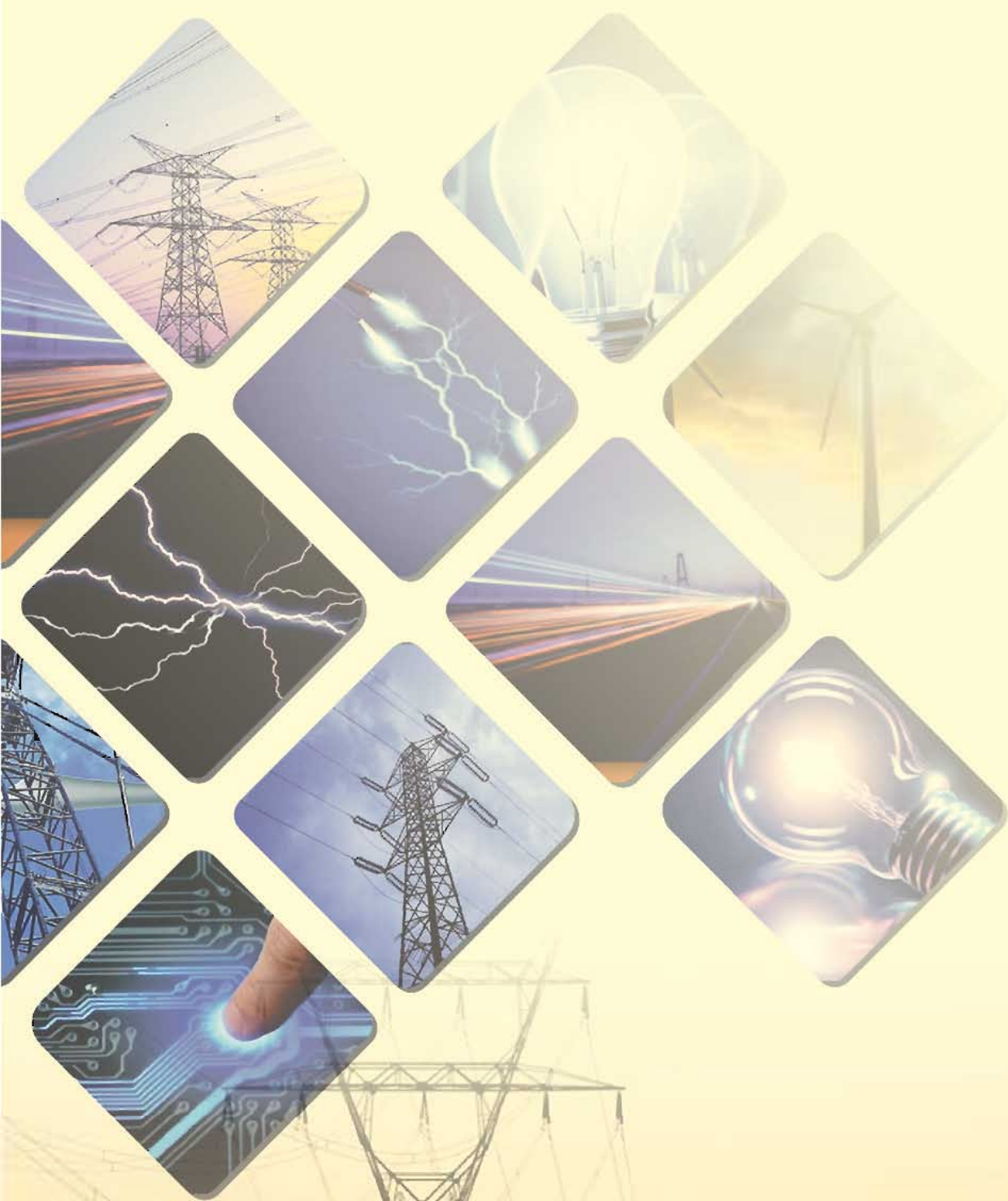
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## List of Abbreviations

|        |                                                                                                       |
|--------|-------------------------------------------------------------------------------------------------------|
| AERC   | Assam Electricity Regulatory Commission                                                               |
| AMEU   | Association of Municipal Electricity Utilities                                                        |
| BEA    | Bhutan Electricity Authority                                                                          |
| BERC   | Bangladesh Energy Regulatory Commission                                                               |
| BERC   | Bihar Electricity Regulatory Commission                                                               |
| BPC    | Bhutan Power Corporation                                                                              |
| BPDB   | Bangladesh Power Development Board                                                                    |
| BU     | Billion Units                                                                                         |
| CAISO  | California Independent System Operator                                                                |
| CASA   | Central Asia South Asia                                                                               |
| CBET   | Cross Border Electricity Trade                                                                        |
| CEA    | Central Electricity Authority                                                                         |
| CEB    | Ceylon Electricity Board                                                                              |
| CERC   | Central Electricity Regulation Commission                                                             |
| CID    | Company Identifier                                                                                    |
| CNEE   | National Commission for Electric Energy / Comisión Nacional de Energía Eléctrica                      |
| CRIE   | Regional Commission for Electricity Interconnection /<br>Comisión Regional de Interconexión Eléctrica |
| CTU    | Central Transmission Utility                                                                          |
| DABS   | Da Afghanistan Breshna Sherkat                                                                        |
| DAM    | Day Ahead Market                                                                                      |
| DGPC   | Druk Green Power Corporation                                                                          |
| DHPS   | Department of Hydropower and Power Systems                                                            |
| DISCO  | Distribution Company                                                                                  |
| DME    | Department of Minerals and Energy                                                                     |
| DOE    | Department of Energy                                                                                  |
| DoED   | The Department of Electricity Development                                                             |
| DPDC   | Dhaka Power Distribution Company                                                                      |
| ECOWAS | Economic Community of West African States                                                             |
| EOR    | Ente Operador Regional                                                                                |
| ERERA  | ECOWAS Regional Electricity Regulatory Authority                                                      |
| ETFC   | Electricity Tariff Fixation Commission                                                                |
| FDI    | Foreign Direct Investment                                                                             |
| FERC   | Federal Energy Regulatory Commission                                                                  |
| FPA    | Federal Power Act                                                                                     |
| FTA    | Free Trade Agreement                                                                                  |
| GENCO  | Generation Company                                                                                    |
| GERC   | Gujarat Electricity Regulatory Commission                                                             |
| Gol    | Government of India                                                                                   |
| GoN    | Government of Nepal                                                                                   |
| GoP    | Government of Pakistan                                                                                |
| GU     | Giga units                                                                                            |
| GW     | Giga Watt                                                                                             |

|        |                                                              |
|--------|--------------------------------------------------------------|
| GWh    | Giga Watt Hour                                               |
| IBN    | Investment Board of Nepal                                    |
| IPB    | Industrial Promotion Board                                   |
| IPP    | Independent Power Producer                                   |
| IRADE  | Integrated Research for Action and Development               |
| ISMO   | Independent System and Market Operator                       |
| ISO-NE | Independent System Operator - New England                    |
| kWh    | Kilo Watt Hour                                               |
| LTA    | Long term access                                             |
| MBR    | Market Based Rate                                            |
| MDB    | Multilateral Development Bank                                |
| MER    | Regional Electricity Market                                  |
| MERC   | Maharashtra Electricity Regulatory Commission                |
| MISO   | Midcontinent Independent System Operator                     |
| MNRE   | Ministry of New and Renewable Energy                         |
| MoP    | Ministry of Power                                            |
| MOPE   | Ministry of Power and Energy                                 |
| MOPPRD | The Ministry of Petroleum and Petroleum Resource Development |
| MOWR   | Ministry of Water Resources                                  |
| MPEMR  | Ministry of Power, Energy and Mineral Resources              |
| MPP    | Mega Power Policy                                            |
| MTOA   | Medium term open access                                      |
| MU     | Million Units                                                |
| MW     | Mega Watt                                                    |
| MWP    | Ministry of Water and Power                                  |
| NCRE   | Non-Conventional Renewable Energy                            |
| NEA    | Nepal Electricity Authority                                  |
| NEP    | National Energy Policy                                       |
| NEPRA  | National Electric Power Regularity Authority                 |
| NERSA  | National Energy Regulator of South Africa                    |
| NHPC   | National Hydro Power Corporation                             |
| NLDC   | National Load Dispatch Center                                |
| NTDC   | National Transmission and Dispatch (Grid) Company            |
| NTPC   | National Thermal Power Corporation                           |
| NYISO  | New York Independent System Operator                         |
| OASIS  | Open Access Same-Time Information System                     |
| OTC    | Over the Counter                                             |
| PAN    | Permanent Account Number                                     |
| PDF    | Portable Document Format                                     |
| PFC    | Power Finance Corporation                                    |
| PGCB   | Power Grid Company of Bangladesh                             |
| PGCIL  | Power Grid Corporation of India Limited                      |
| POSOCO | Power System Operation Corporation                           |
| PPP    | Public Private Partnership                                   |
| PSMP   | Power System Master Plan                                     |

|          |                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| PSPGP    | Private Sector Power Generation Policy                                                                                                  |
| PSU      | Public Sector Unit                                                                                                                      |
| PTA      | Power Trade Agreement                                                                                                                   |
| PTC      | Power Trading Corporation                                                                                                               |
| PUCSL    | Public Utilities Commission of Sri Lanka                                                                                                |
| REC      | Renewable Energy Certificate                                                                                                            |
| REMR     | Regional Energy Market Regulations                                                                                                      |
| RERA     | Regional Electricity Regulators Association                                                                                             |
| RGOB     | Royal Government of Bhutan                                                                                                              |
| RLDC     | Regional Load Despatch Center                                                                                                           |
| ROW      | Right of Way                                                                                                                            |
| RVPN     | Rajasthan Rajya Vidyut Prasaran Nigam                                                                                                   |
| SA       | South Asian                                                                                                                             |
| SAARC    | South Asian Association for Regional Cooperation                                                                                        |
| SAC      | South Asian Countries                                                                                                                   |
| SADC     | Southern African Development Community                                                                                                  |
| SAFRER   | South Asia Forum of Electricity Regulators                                                                                              |
| SAPP     | South African Power Pool                                                                                                                |
| SARI/IE  | South Asia Regional Initiative for Energy Integration                                                                                   |
| SEB      | State Electricity Board                                                                                                                 |
| SERC     | State Electricity Regulation Commission                                                                                                 |
| SIEPAC   | Electric Interconnection System for Central American Countries /<br>Sistema de Interconexión Eléctrica de los Países de América Central |
| SIGET    | Superintendent General of Electricity and Telecommunications /<br>Superintendencia General de Electricidad y Telecomunicaciones         |
| SLDC     | State Load Despatch Center                                                                                                              |
| SPV      | Special Purpose Vehicle                                                                                                                 |
| STU      | State Transmission Utility                                                                                                              |
| T&D      | Transmission and Distribution                                                                                                           |
| TANGEDCO | Tamil Nadu Generation and Distribution Company                                                                                          |
| TF       | Taskforce                                                                                                                               |
| TSA      | Transmission Service Agreement                                                                                                          |
| TSO      | Transmission System Operator                                                                                                            |
| US       | United States                                                                                                                           |
| USA      | United States of America                                                                                                                |
| USAID    | United States Agency for International Development                                                                                      |
| USD      | United States Dollar                                                                                                                    |
| WAPDA    | Water and Power Development Authority                                                                                                   |
| WAPP     | West African Power Pool                                                                                                                 |
| WBERC    | West Bengal Electricity Regulatory Commission                                                                                           |
| WEC      | Water and Energy Commission                                                                                                             |
| XML      | Extensible Markup Language                                                                                                              |



# I Executive Summary

## 1.1 Context and objectives

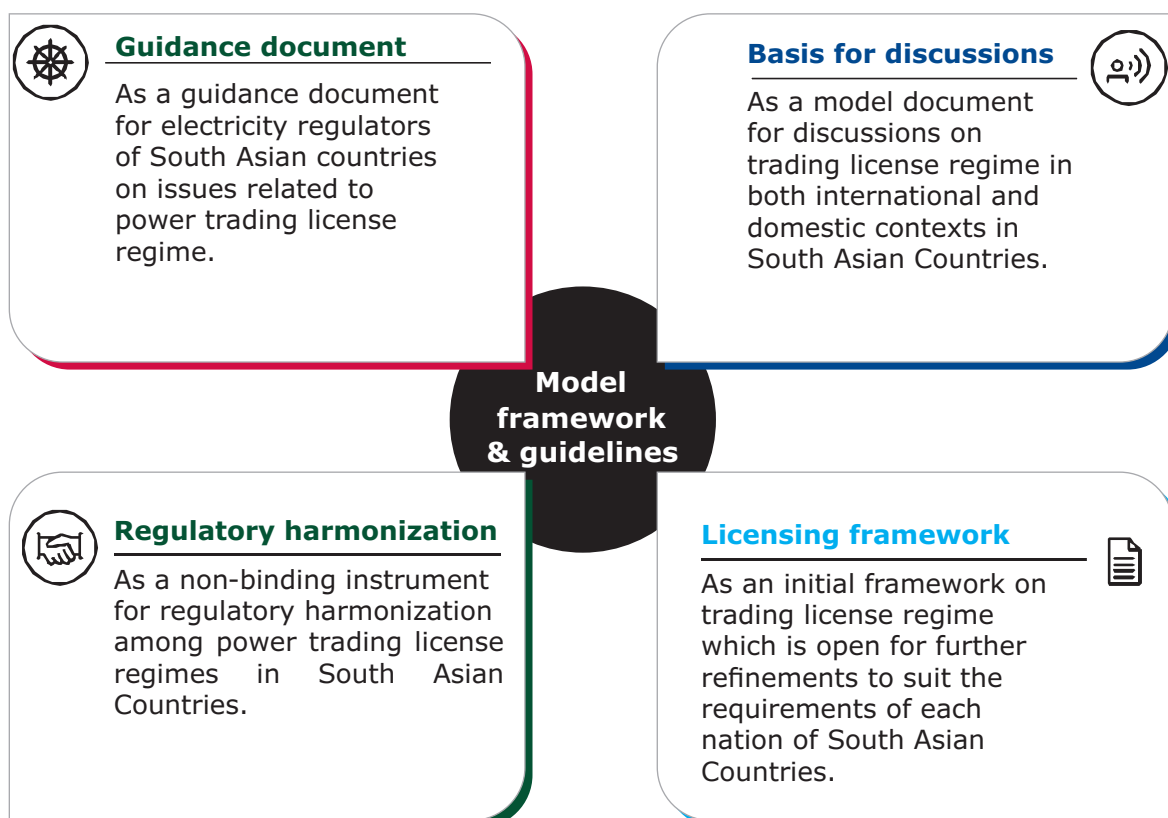
In the last few decades, Cross Border Electricity Trade (CBET) in South Asian region have become more established, with the quantum of trade also seeing an increasing trend. For some countries, CBET has become a crucial revenue source to aid in the overall economic growth of the country; while for some other countries, CBET has become a necessary tool to tide over energy shortages.

CBET in South Asia, especially in the BBIN sub-group (Bhutan, Bangladesh, India and Nepal), relies on power trading licensees as intermediaries for arranging the trade. However, even though multiple countries in South Asian region participate in CBET, involvement of power traders is more or less limited to trading licensees of India. Though the central role of India in CBET in South Asian region is a key reason, another factor behind this disparity is that none of the other countries in South Asian region has a well-developed trading license regime in their power markets.

In this backdrop, it becomes important to work towards creating an enabling framework for trading licensees in South Asian countries other than India. With this in mind, the model framework and guidelines for trading licence regime and grant of trading licence in South Asia (except India) has been developed, with a view to initiate/advance power trading in South Asian countries and facilitate Cross Border Electricity Trade (CBET) in the South Asian region.

This framework and guidelines builds upon the earlier recommendations of a regional level task force constituted under the South Asia Regional Initiative for Energy Integration (SARI/EI) program for the “Coordination of policies, legal and regulatory frameworks”.

### Purpose of model framework and guidelines



The model framework for trading licence regime and guidelines for grant of trading licence to initiate / advance power trading in SA countries and facilitate CBET in the SA region is expected to serve the following purposes:

By proposing a common framework for trading licensees, it is expected that the evolution of trading license regime in South Asia will be taken up in a more harmonized manner. Presence / absence of legal, regulatory and operational inconsistencies is expected to play a key role when trading licensees of different countries interact between each other to indulge in cross border trade.

## 1.2 Existing trading license regime in South Asian countries

In 2014, the SAARC member countries signed the SAARC Framework Agreement for Energy Cooperation (Electricity) which laid a formal foundation for cooperation among South Asian countries in the electricity industry. The agreement accepts trading licensees as one of the “Buying and Selling Entities”, which shall be allowed to engage in CBET subject to the laws and regulations of the concerned member countries. The Agreement also specified that it is up to the individual countries to deal with regulatory issues related to electricity trading. Thus it becomes important to analyze the legal, regulatory, operational and institutional framework for trading licensees in the South Asian countries, to assess their readiness for institutionalizing a trading license regime.

The summary of analysis, provided below, reveals that other than India, none of the South Asian countries have a properly developed regulatory, operational and institutional framework for trading license regime. In case of Bhutan and Nepal, trading is recognized as a distinct licensed activity in their legislation, though associated regulatory framework is yet to evolve.

### Trading license framework in South Asian countries

| Country     | Legal Framework | Regulatory Framework | Operational Framework | Institutional Framework |
|-------------|-----------------|----------------------|-----------------------|-------------------------|
| Afghanistan | ✗               | ✗                    | ✗                     | ✗                       |
| Bangladesh  | ✗               | ✗                    | ✗                     | ✗                       |
| Bhutan      | ✓               | ✗                    | ✗                     | ✗                       |
| India       | ✓               | ✓                    | ✓                     | ✓                       |
| Maldives    | ✗               | ✗                    | ✗                     | ✗                       |
| Nepal*      | ●               | ✗                    | ✗                     | ✗                       |
| Pakistan    | ✗               | ✗                    | ✗                     | ✗                       |
| Sri Lanka   | ✗               | ✗                    | ✗                     | ✗                       |

✓ - Yes    ✗ - No    ● - Partial

*(In case of Nepal, trading is recognized as a distinct licensed activity in their Electricity Regulatory Commission Act, 2017. However, licensing is dealt with in Nepal's Electricity Act, 1992 which have not yet been amended to support the provisions of Electricity Regulatory Commission Act, 2017.)*

The above analysis clearly points out the inadequacy of existing framework for trading license regime in South Asian countries, other than India.

## 1.3 Recommendations for South Asia based on international experiences

While designing model framework and guidelines, lessons can be drawn from trading license regimes elsewhere. A study of the trading license regimes in the respective domestic power sectors and the manner of their integration with cross border trade arrangements can offer learning to all the South Asian countries. While India offers the best reference, considering

its matured trading market and similarity in industry structure with those of other South Asian countries, lessons can also be drawn from participants of international power pools such as West African Power Pool (WAPP), South African Power Pool (SAPP) and the Central American Electrical Interconnection System (SIEPAC).

Keeping in mind some of the identified ingredients of trading license regime, the following international best practices on power trading were identified, which were then utilized for deriving appropriate recommendations for South Asia.

#### International experience in institutionalization of trading license regime

| Key ingredients of trading license regime                                             | Lessons from other countries and power pools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legal framework for licensing and regulation of trading activity                      | <ul style="list-style-type: none"> <li>Electricity trading, and its licensing / registration, and subsequent regulation may be defined as part of statutory legislation so as to institutionalize a well-defined and predictable trading license regime. (India – Electricity Act 2003, South Africa - Electricity Regulation Act 2006, El Salvador – General Electric Law 1996, Guatemala – General Electric Law 1996)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Extensibility of trading license regime to cover cross border trade                   | <ul style="list-style-type: none"> <li>The licensing of trading licensees for the purpose of cross-border trade can be left to the respective national level regulatory commissions. Association of regulatory commissions at regional level can make non-binding recommendations for harmonization of regulations. (RERA's guidelines for authorizing import and export, qualification requirements for participation in day ahead market of SAPP, India's proposed guidelines for cross border trade)</li> <li>An alternative model is also available wherein the application for cross border trade authorization may be submitted through the system / market operator at the country level to the regional level regulator and system operator. However this mechanism can work only when treaty mechanisms are in place to set up regional level regulatory commissions and system operators. (Regional Energy Market Regulations of Central American Interconnection System)</li> <li>In case of non-compatibility in regulations of participating nations in cross border trade, simple transitional mechanisms may be initially prescribed, and in the meantime efforts may be made for regulatory harmonization and development of final mechanisms for cross border trade. (Regional Energy Market Transitional Regulations of Central American Interconnection System)</li> </ul> |
| Power market structure that allows for competition                                    | <ul style="list-style-type: none"> <li>Power market should have progressed from vertical monopoly / single buyer model to whole sale competition, allowing trading licensees to source power from IPPs and other sources for further re-sale. (Example: South Africa)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Institution for grant of licenses, and for regulation and monitoring of the licensees | <ul style="list-style-type: none"> <li>Regulatory commissions may be appointed as the institution for receiving, analyzing and approving the applications for grant of license / registration / authorization for undertaking trading, and for the subsequent regulation and monitoring of trading activity. (Example: CERC in India, NERSA in South Africa, FERC in United States, SIGET in El Salvador)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Key ingredients of trading license regime                                | Lessons from other countries and power pools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Segregation of licensees into different categories                       | <ul style="list-style-type: none"> <li>Defining different categories of trading licensees based on trade volume, with different qualification criteria allows for lower barriers of entry and prevents concentration of market power. (Example: Category I to IV licensees in India)</li> <li>Alternatively, segregation of licensees can be done based on their market power, with lesser reporting requirements in the case of licensees who does not have any market power. This allows the regulator to focus on the section of traders who are most likely to effectively indulge in unfair practices. (Example: Category 1 and 2 wholesalers in USA)</li> </ul>                                                                                                                                                                  |
| Technical requirements for grant of license                              | <ul style="list-style-type: none"> <li>Technical qualification criteria to be kept at a minimum, with requirement specified for the competence of staff to undertake trading. (India)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Financial requirements for grant of license                              | <ul style="list-style-type: none"> <li>Financial qualification criteria based on net-worth linked with volume of trading, and minimum current ratio and liquidity ratios. (India)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Frameworks governing grant, amendment, renewal or revocation of licenses | <ul style="list-style-type: none"> <li>Notifying a properly defined process for scrutiny of trading license applications, identifying the key stakeholders and listing key timelines and milestones will enable a streamlined process for grant / amendment / revocation of licenses. (India, South Africa, United States of America, Central American Interconnection)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Market monitoring arrangements                                           | <ul style="list-style-type: none"> <li>Trading business requires continuous market monitoring and oversight on the part of the regulatory commissions, which may be enabled through mechanisms for periodic information dissemination and reporting. (India – CERC’s information reporting forms as per trading license regulations, United States of America – Online filing of information through FERC’s systems)</li> <li>A well maintained “agent register” / “trading licensee register” detailing information such as affiliates, penalties imposed by regulators if any, validity of license, category of license etc. can be a useful tool for the stakeholders to ascertain the track-record of trading licensees. (Agent register maintained by CRIE under the provisions of Regional Energy Market Regulations)</li> </ul> |

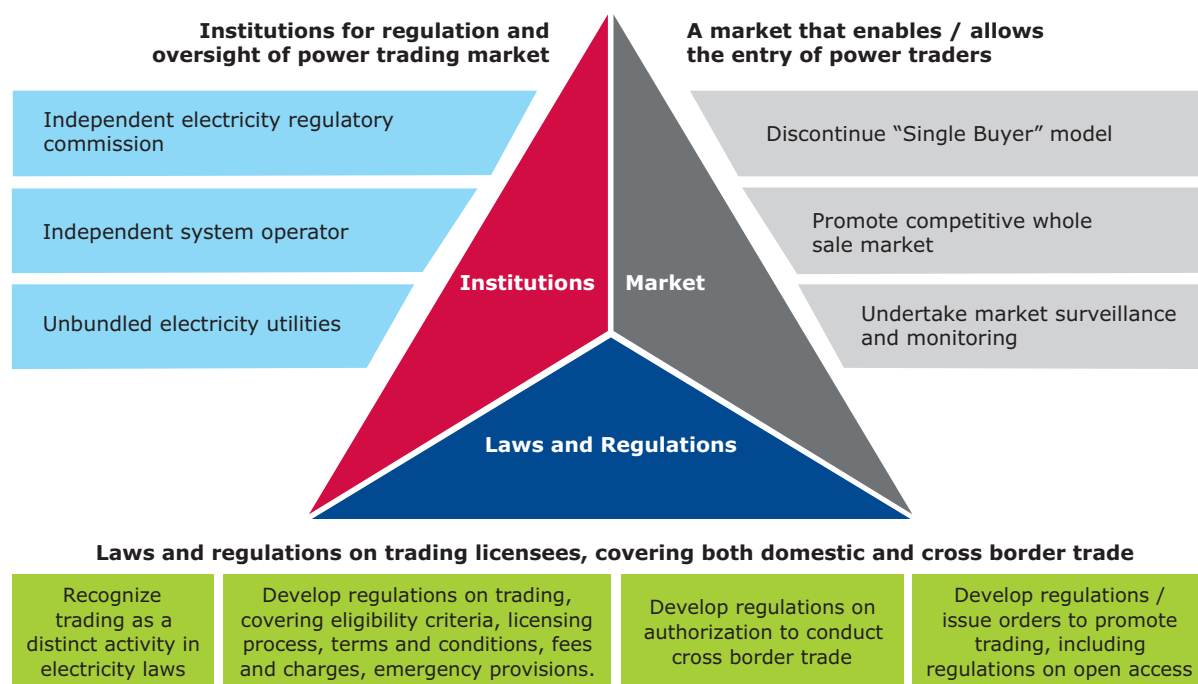
## 1.4 Model framework

Based on the study of trading license regimes in India, other countries and regional power pools, a model framework with three basic elements have been identified to form the basis for deriving guidelines for trading license regime in South Asia. These elements are:

- **Laws and regulations** on trading licensees, covering both domestic and cross border trade
- **Institutions** for regulation and oversight of power trading market
- A **market** that enables / allows the entry of power traders

- The sub components of this framework is illustrated in the following diagram.

### Model framework for trading license regime in South Asia



Once such a framework is in place, it is expected that the interaction between the basic elements of the framework will result in further development of the trading license regime, such as development of detailed procedures and the introduction of standardized trading products in electricity.

## 1.5 Model guidelines

Considering the guiding principles and the model framework, guidelines for trading license regime have been proposed, the summary of which has been provided below.

**Table: Summary of guidelines for trading license regime in South Asia**

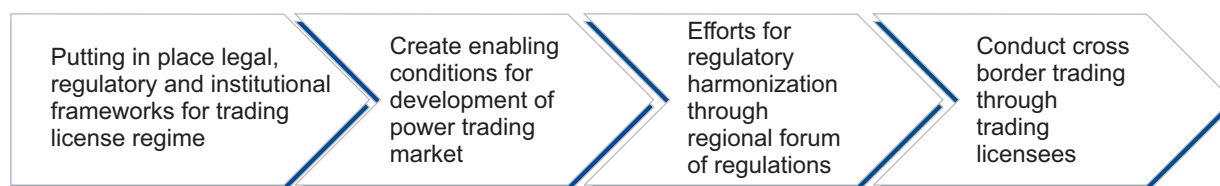
| No. | Guideline                                                                               | Summary                                                                                                                                                                                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Operationalization of legal and regulatory framework for trading licensees              | <ul style="list-style-type: none"> <li>Introduce trading as a defined and allowed activity under statutory legislation.</li> <li>Empower the respective national level electricity regulators to exercise market oversight and price control in trading market through measures such as trading margin cap and emergency provisions.</li> </ul> |
| 2   | Extending / applying the trading license framework in the context of cross border trade | <ul style="list-style-type: none"> <li>Introduce the concept of "authorization for cross border trade", so that trading licensees can conduct cross border trade.</li> </ul>                                                                                                                                                                    |
| 3   | Categories of trading licensees and qualification criteria                              | <ul style="list-style-type: none"> <li>Categorization of trading licensees to be based on proposed annual trading volume.</li> <li>Authorization for cross border trade to be given initially to only traders falling in the highest category.</li> </ul>                                                                                       |

| No. | Guideline                                                 | Summary                                                                                                                                                                                                                                                            |
|-----|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4   | Grant and revocation of trading licence                   | <ul style="list-style-type: none"> <li>Clearly define the procedures for issue, renewal, amendment and revocation of trading licenses.</li> </ul>                                                                                                                  |
| 5   | Terms, conditions and obligations of trading licensees    | <ul style="list-style-type: none"> <li>Trading licensees to be made responsible for fair, transparent and competitive market operations and safe grid operation through terms and conditions and obligations specified in legal / regulatory framework.</li> </ul> |
| 6   | Market development                                        | <ul style="list-style-type: none"> <li>Hurdles against the introduction and participation of power traders in the power market may be removed through legal / regulatory changes and institutional restructuring.</li> </ul>                                       |
| 7   | Encouraging regional mechanisms for co-ordination in CBET | <ul style="list-style-type: none"> <li>Ensuring co-operation and support in the operationalization of regional forums for collaboration in CBET</li> </ul>                                                                                                         |

## 1.6 Roadmap

For the institutionalization and operationalization of trading license regime in South Asian countries, the following roadmap is proposed, which may be further refined by the respective countries.

### Roadmap and action plan for trading license regime in South Asia



The details of each of these phases are described below:

#### Putting in place legal, regulatory and institutional frameworks

The countries may set up the legal, regulatory and institutional frameworks required for trading in a gradual manner, including:

1. Make provision in laws, identifying trading as a distinct and licensed activity
2. Define the regulatory authority for trading
3. Notify regulations for trading licensees, including the requirements for obtaining authorization for cross border trade

As amendment of laws could take time, subject to legal feasibility, option of commencement of trading through regulatory changes may also be explored.

#### Create enabling conditions for development of power trading market

For trading to be effective, hurdles in market development will have to be removed, such as transitioning from “single buyer” model to wholesale competition and creation of independent system operator.

However, in case the countries are reluctant to introduce reforms in domestic market including unbundling of integrated utilities, but is keen to explore cross border trade opportunities through trading licensees, it may choose to limit its reforms to having an independent system operator, and allowing trading licensees to undertake purchase and resale for cross border electricity transactions.

### **Efforts for regulatory harmonization through regional forums**

As the countries set up regulatory frameworks for trading, efforts may be made to have such frameworks developed in a harmonized manner in the South Asian region. This would require periodic interactions at regional level, through existing and newly constituted forums. Some of the areas where the role of regulatory harmonization is important includes:

1. Allowing trading licensees set up in other countries to undertake trading transactions with domestic trading licensees
2. Planning for long term market reforms such as wheeling of power through more than two countries
3. Sharing of market information to ensure that there is no market manipulation by the licensees

### **Conduct cross border trading through trading licensees**

Once the legal, regulatory and institutional mechanisms are in place, and the market has been restructured to allow a meaningful role for traders, trading activity can be commenced, in both domestic and cross border contexts.

Though these framework, guidelines and action plans have been developed based on study of the existing framework, international best practices and the framework proposed in this report, the respective countries may modify it further, as per their requirements, as long as they feel the same is in the interest of promotion of cross border trade in South Asia.

## 2 Introduction

### 2.1 Background

In 2014, the South Asian Association for Regional Cooperation (SAARC) countries came together to sign the SAARC Framework Agreement for Energy Cooperation (Electricity), which emphasized the need to promote regional power trade. The agreement noted that cross border electricity exchanges and trade among the SAARC Member States leads to optimal utilization of regional electricity generating resources, enhanced grid security, and electricity trade arising from diversity in peak demand and seasonal variations.

Power traders are expected to play a bigger role in advancing Cross Border Electricity Trade (CBET) in the region. CBET can benefit the region on account of the following aspects:

1. Availability of surplus generation capacity and stranded assets in India, vis-à-vis power deficit in countries like Nepal and Bangladesh
2. Seasonal generation shortage in hydro power dependent countries like Nepal, which can be offset from other SA countries
3. Potential for large scale hydropower plants in countries like Bhutan and Nepal, coupled with demand for large scale clean power in India and other SA countries
4. Unavailability of adequate hydropower as a variable generation source for system balancing under high rates of RE penetration in India
5. Ease of electricity supply to isolated border towns from power grids of the neighboring countries rather than from domestic power grid

Currently, Power Trading Corporation (PTC), NTPC Vidyut Vyapar Nigam Ltd. (NVVN) undertake power trade between Nepal-India, Bhutan-India and India-Bangladesh. However, SA countries, with exception of India, lack mature trading market, a well-defined and operational legal, policy or operational frameworks and supporting institutions.

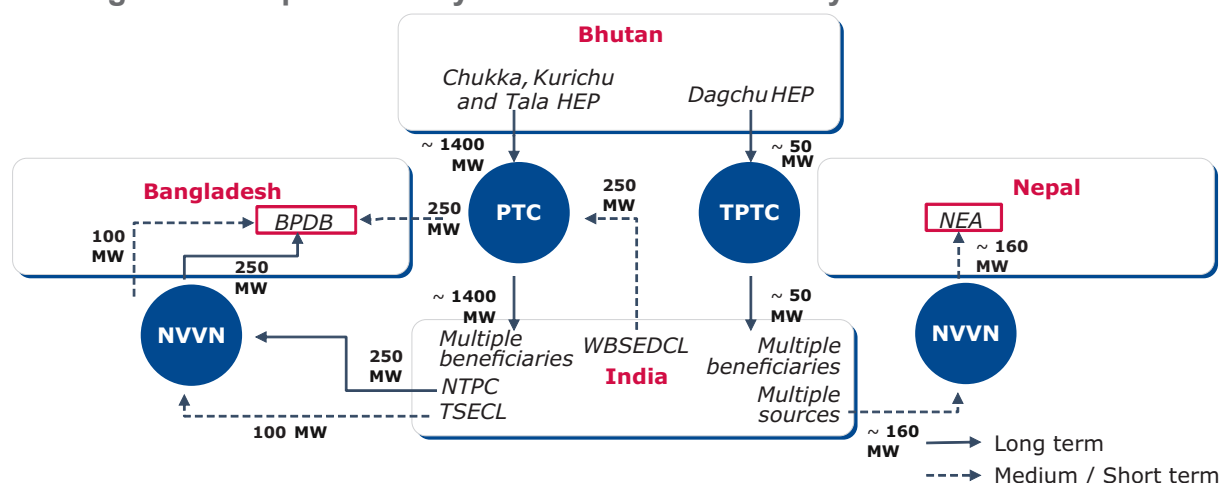
In this backdrop, it becomes important to work towards creating an enabling framework for trading licensees in SA countries other than India. The starting point of such an enabling framework consists of providing the supporting legal, policy, regulatory, operational and institutional frameworks.

### 2.2 Context of this Study

#### 2.2.1 Cross Border Electricity Trade in South Asia

The Cross Border Electricity Trade (CBET) in South Asia has evolved through bilateral arrangements with India being the central figure by virtue of its geographical location and being the largest economy in the region. Bulk of the CBET in South Asia region happens in the BBIN sub-group, which consists of Bhutan, Bangladesh, India and Nepal. The bilateral arrangements between India-Bhutan, India-Bangladesh and India-Nepal are well established now and are being further strengthened.

**Figure 1: Snapshot of key Cross Border Electricity Trade in South Asia**



Bhutan exports power to India, through Indian power trading entities, from large hydro stations. The present power transmission capacity between Bhutan and India is around 2,500 MW.

Nepal has been importing power from India since 1971, with the power from India playing a crucial role in the dry months of December – April, when the hydropower generation in the country falls very low. Imports from India accounted for nearly 34% of the annual electricity supply of the country in FY 2015-16.

Bangladesh buys power from India under both long-term and short-term arrangements. Current power export is to the tune of 600 MW.

There is also a very insignificant level of power exports (1–3 MW) from India to Myanmar, mainly to provide supply to Tamu town in Myanmar, which is not connected to Myanmar grid.

## 2.2.2 Role of USAID and SARI/EI

USAID initiated the SARI/EI programme in 2000 for promoting energy security through energy cooperation and integration in the South Asian (SA) region. Now, in its fourth phase, the SARI/EI programme is focused on advancing CBET through a consultative process involving three Task Forces (TF) of the member nations. These Task Forces are engaged in:

- TF 1: Coordination of policies, legal and regulatory frameworks
- TF 2: Advancement of transmission system interconnections, and
- TF 3: South Asia regional electricity markets

This study was undertaken subsequent to the deliberations of *TF 1: Coordination of policies, legal and regulatory frameworks*, wherein CBET regulatory guidelines were developed. The key recommendation of the task force 1 to the South Asian countries was to recognize CBET as a distinct licensing activity, for which legal and regulatory frameworks were required to be prepared. This study report builds upon the recommendations of the task force to provide a detailed guideline and action plan for the respective South Asian countries to help them develop trading licence regime.

## 2.3 Salient features of this Study

### 2.3.1 Key objectives

To develop the model framework and guidelines for trading licence regime and grant of trading licence in South Asia (except India) with a view to initiate/advance and facilitate Cross Border Electricity Trade (CBET) among the South Asian countries.

### 2.3.2 Scope of work

The scope of the study was as follows:

1. Review and analyse the prevailing framework, regulations and procedures relating to trading licence regimes and for grant of trading license in SA countries (other than India).
2. Review and analyse the prevailing institutional structure/arrangements for granting trading licence in SA countries.
3. Review and analyse international best practices (with particular focus on Indian experience) in trading in the context of domestic power sector as well as CBET, particularly focusing on:
  - a. Key drivers, enabling factors and barriers to institutionalizing trading licensing regimes and grant of licences
  - b. Role of power traders and how they have influenced the development of power market in both domestic and regional context
  - c. Challenges associated with designing, granting and implementing trading licence regimes
4. Development of a proposed framework for a trading licence regime and guidelines/procedures for Grant of Trading licence in South Asia, road map and action plan for the design and implementation of electricity trading guidelines to advance CBET in South Asia. This would include but not be limited to:
  - a. Requirements of being an electricity trader, procedure for grant of licence, terms and conditions of the licence, obligations of the licensee and revocation of licence and other key aspects associated with grant of trading licences.
  - b. The above suggested model framework guidelines should also include various standard formats such as i) application form ii) grant of trading licenses and other required formats.
5. Global as well as Indian experiences suggest that institutionalizing a trading licensing regime and granting of trading licences must be viewed in the context of the existing level of power sector reforms and readiness towards electricity trading as well as keeping in view the larger perspective of Cross Border Electricity Trade. It is, therefore, critical that views and suggestions of key stakeholders (e.g. regulators, transmission utilities, power companies, energy ministries etc.) are taken into consideration. To this end the Consultant is expected to organize bilateral stakeholder consultation meetings/Con-call with such stakeholders/parties of South Asian Countries in consultation with SARI/EI/IRADe. The study will also take in to account the Cross Border Electricity Trade Policy being developed by MoP, GoI and the various studies being undertaken by SARI/EI Task Forces. The study will also focus on technical aspects of the open access regime.

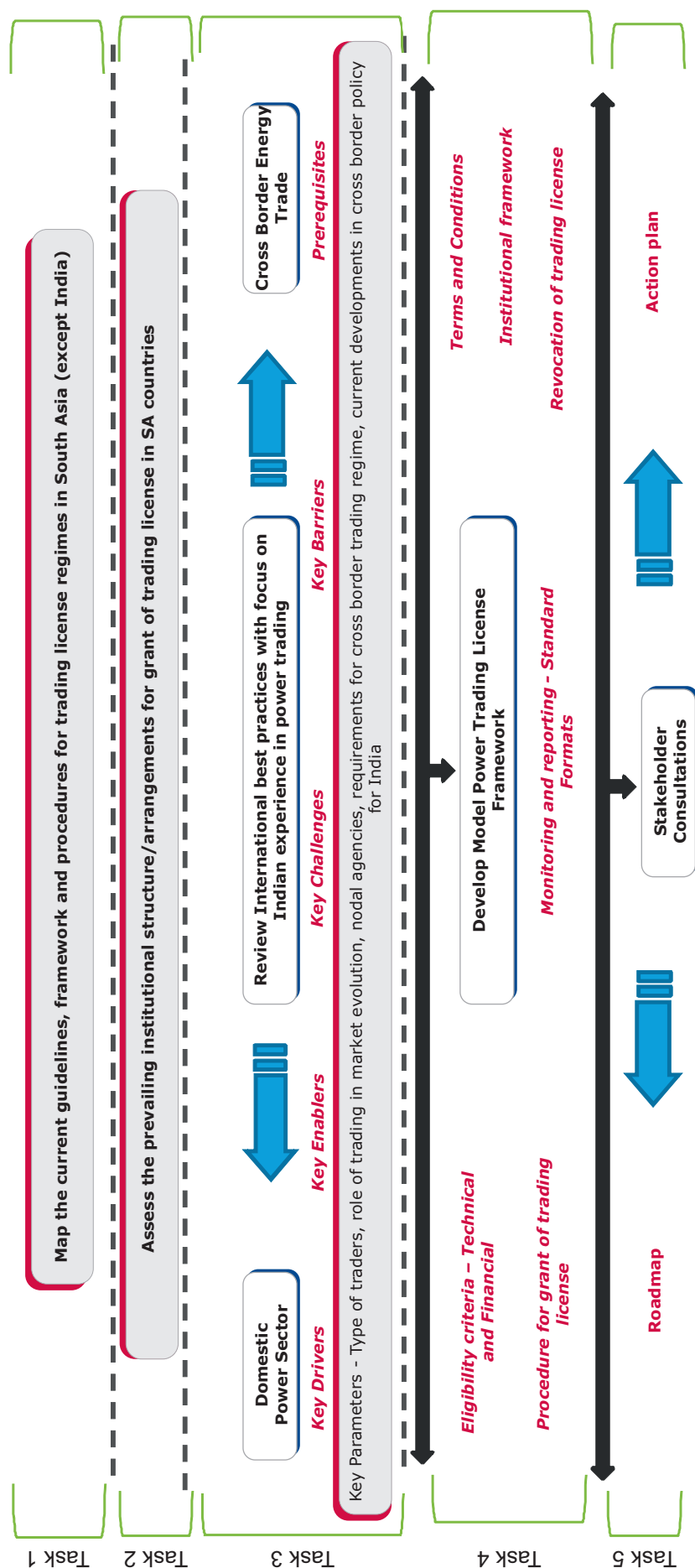
## 2.4 Methodology

The following methodology was adopted for conducting this study, wherein the scope was split into five separate tasks:

### Task 1- Map the current power trading licence regime in South Asia

The evolution of institutionalized power trading framework in India has led to a stable domestic and cross border power-trading regime. The other power markets in South Asia (Sri Lanka, Pakistan, Nepal, Bangladesh and Bhutan) are still in nascent stages of evolution. Thus, it becomes important to ascertain the progress of the legal and regulatory framework in each

Figure 2: Methodology for the study



of these countries to promote CBET in the region. Therefore, the initial task focused on assessment of legal, policy, regulatory and operational framework for power trading in the South Asian countries.

### **Task 2 - Assess the prevailing institutional arrangements for grant of trading licence**

The countries in South Asia are at different levels of evolution as far as open access and power trading market structure is concerned. The stage of power sector reforms determine the prevailing institutional structure and arrangements that guide the framework.

Task 2 focused on evaluation of the institutional framework in the South Asian countries and analyze the interdependencies of these institutions and their preparedness to undertake various tasks required for establishing a power trading licence regime. Due to the interdependency, this task was carried out in parallel with task 1.

### **Task 3 - International best practices with focus on Indian experience**

This involved a detailed review of international best practices on policy and regulatory provisions relating to implementation of power trading licensing regime in the context of domestic and CBET markets. The objective was to identify the key issues, challenges and enablers, which have led to development of power trading framework in India and across the globe, and to draw upon those to derive the recommendations for South Asia.

### **Task 4 - Develop model framework and guidelines**

In this task, based on the international experience in the development of policy and regulations for the trading licence framework, and the findings in tasks 1 and 2, a regional model framework and guidelines for trading licence regimes were developed. The guidelines specify both macro and micro level attributes, including guidance on creating categories of licensees, fixation of eligibility criteria etc.

### **Task 5 - Stakeholder consultations, action plan and roadmap**

Inputs from various stakeholders is a critical parameter for finalizing the model guidelines for power trading licence. Thus, stakeholder consultation forms a major part of task 5.

It helped prepare an action plan and roadmap for all the countries in South Asia (except India) for the development of power trading licence framework, which took into consideration the present market structure, the proposed changes in future and overall applicability and potential for cross border trade.

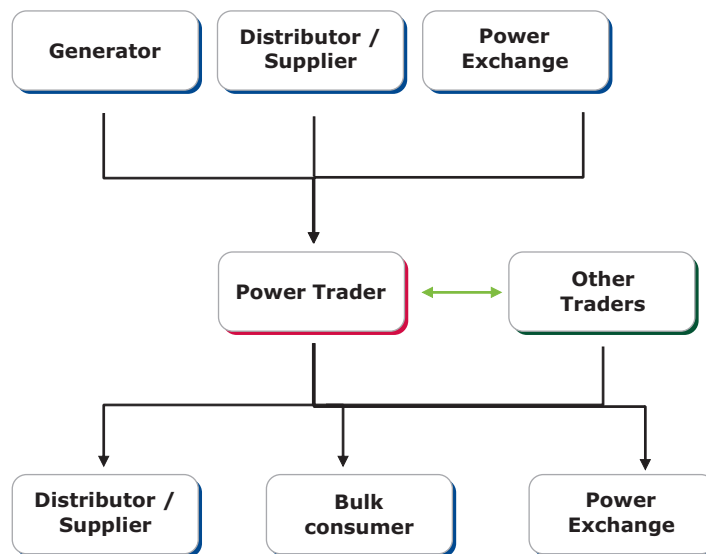
## **2.4 Key concepts**

The key concepts of this study report are discussed below:

### **2.4.1 Power trading**

Power trading refers to the business of purchase and resale of electricity. Trading acts as a bridge, which facilitates commercial interactions between various category of electricity suppliers and consumers, with the trade itself being conducted through one or more than one traders.

**Figure 3: Concept of electricity trade**



### **2.4.2 Trading licensee**

In regulated power markets, power trading is usually treated as a licensed activity. A trading licensee is an entity, which is licensed to engage in power trade. The licensing authority is typically an electricity regulatory commission, or in its absence, a governmental department. The licensing authority prescribes the terms and conditions and obligations for the licensee, and maintains oversight over the licensee's trading activities.

### **2.4.3 Benefits of trading licence**

Power traders play a major role in various aspects of the power sector, such as:

- Act as counter party in the transactions - Providing single window service for market participants
- Bring in market transparency - Remove information asymmetry and enable optimum utilization of generation capacity
- Increase liquidity in the market and - facilitate competitive discovery of price.
- Facilitate capital mobilization - Encourage private investments
- Offer risk mitigation options
- Aiding in wholesale competition and market development

### 3 Trading licence regime in South Asia – Current Scenario

#### 3.1 Evaluation framework and parameters for assessing trading licence regimes

To implement the common framework for trading licence among SAC, it is necessary to create enabling framework by various parameters as described below:

Figure 4: Enabling framework for trading licence regime

|                      |                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legal</b>         | Enactment of new policy, laws and regulation or amendment in extant, for the trading licence activity.                                                                                                                                                                                                                                                                                                 |
| <b>Regulatory</b>    | Development of regulations for grant of trading licence. These regulations must define qualification requirements, application procedure, involvement of other stakeholders such as consumers, terms and conditions of licence, definition of role of licensing, regulatory and monitoring authorities, conditions for continuance of licence, provisions for amendment and revocation of licence etc. |
| <b>Operational</b>   | Detailed procedures and guidelines regarding trading licence framework, in case the same is not made part of the regulatory framework.                                                                                                                                                                                                                                                                 |
| <b>Institutional</b> | Defining the role of institutions in grant of licence, regulation of licensees, and monitoring of licensee's operations; Capacity building in the institutions to enable the execution of roles defined for them.                                                                                                                                                                                      |

To harness the full potential of CBET, it is necessary to create trading licence frameworks in SA countries that are in harmony with each other, and as far as possible under the legal framework. Different SA countries (other than India) are currently at different levels of progress in terms of providing a trading license regime. For example, Bhutan recognizes electricity export/ import as a licensed activity. However, the Bangladesh Electricity Regulatory Commission Act, 2003, does not mention export and import of electricity as a licensed activity.

To identify the preparedness of SAC for a trading license regime, the following framework is proposed to discuss and address key enablers. These parameters were used for reviewing the existing trading licence provisions across South Asia. This study will use the above-mentioned framework for trading licence regime to assess

- The preparedness of the SAC for adopting trading licence regimes
- Gap-analysis for identifying areas to be improved upon

**Figure 5: Evaluation parameters for trading licence framework**

|                                   |                                                                                                                                                                                                                                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Institutional Framework</b>    | Power market structure allowing for independent licensing, regulatory and market monitoring authorities operating strictly under the legal and regulatory framework.                                                                               |
| <b>Legal and Policy Framework</b> | National and state level laws allowing trading as a separate licensed activity, which may also include CBET.                                                                                                                                       |
| <b>Regulatory Framework</b>       | Regulatory framework that defines and regulates aspects such as qualification requirements, application procedure, terms and conditions of licence, conditions for continuance of licence, provisions for amendment and revocation of licence etc. |
| <b>Operational Framework</b>      | Guidelines, process and procedures with respect to trading licence regime, which includes a well mapped process for obtaining trading licence from application stage to award of                                                                   |

Rationale for the parameters used in framework is discussed in the following paragraphs.

### **3.1.4 Institutional framework**

To establish trading licence regime in SACs, there needs to be an institutional framework which regulates, supports and monitors the trading licensees in an unbiased manner, operating strictly under the legal and regulatory framework. One of the key pre-requisites include independent licensing, regulatory and market monitoring authorities, which might be under the same organizations or constituted separate organizations.

### **3.1.5 Legal and policy framework**

The enabling of trading as a separately defined licensed activity in countries' policy and legal system at national and state level (if applicable) is important. The framework needs to be enabled through appropriate legislative provisions and backed by relevant policies, which need to be constantly reviewed and improvised with the changing requirements.

### **3.1.6 Regulatory framework**

A well-established regulatory framework is key to the development of trading licence regime in a country as it puts in place necessary qualification requirements, regulations and monitoring & reporting framework. The regulator is responsible for developing qualification requirements, application procedure, terms and conditions of licence, conditions for continuance of license, provisions for amendment and revocation of licence etc. They are also responsible for resolution of disputes, which may arise between the trading licensees and other entities.

### **3.1.7 Operational framework**

The operational framework for implementation of trading licence regime requires specific guidelines, processes and procedures. The process of obtaining trading licence from application stage to award shall be well mapped. While the key aspects may be integrated in the regulations itself, segregation of regulatory framework and operational framework will help in faster implementation of amendments in line with market requirements.

The regional and country wise study of the trading licence regime based on the proposed evaluation framework and parameters are provided in the subsequent sections.

## 3.2 Regional framework

Signed in 2014, the SAARC Framework Agreement for Energy Cooperation (Electricity) laid the foundation for cooperation among South Asian countries in the electricity industry. The agreement emphasizes the need to promote regional power trade. The agreement also observes that cross border electricity exchanges and trade among the SAARC Member States leads to optimal utilization of regional electricity generating resources, enhanced grid security, and electricity trade arising from diversity in peak demand and seasonal variations.

The agreement covers trading licensees as part of “Buying and Selling Entities”:

### *“Article 1*

#### *Definitions*

##### *Buying and Selling Entities*

*Buying and Selling Entities means any authorized public or private power producer, power utility, trading company, transmission utility, distribution company, or any other institution established and registered under the laws of any one of the Member States having permission of buying and selling of electricity within and outside the country in which it is registered.”*

As per Article 13 of the framework agreement, the Member States shall enable Buying and Selling Entities (which includes trading companies too) to engage in cross-border electricity trading subject to the laws and regulations of the concerned Member States.

### *“Article 13*

#### *Facilitating Buying and Selling Entities*

*Member States shall enable Buying and Selling Entities to engage in cross-border electricity trading subject to the laws and regulations of the concerned Member States.”*

Apart from these, there is no specific reference to trading companies / trading as a licensed activity, in the framework agreement. This is in sync with Article 15 of the framework agreement, which specifies that it is up to the individual Member States to deal with regulatory issues related to electricity trading.

### *“Article 15*

#### *Regulatory Mechanisms*

*Member States shall develop the structure, functions and institutional mechanisms to resolve regulatory issues related to electricity exchange and trade.”*

The following section of report assesses the power sector status in South Asian Countries (SAC) with respect to their standing in adoption of framework for trading licence. This includes understanding of the country wise regulatory and policy framework for trading licensees, rules and regulations for country specific trading licensees, prevailing procedure for grant of trading licence (if it exists, in country) etc.

## 3.3 India

### 3.3.1 Institutional framework for electricity

Indian power sector is structured under a federal setup with concurrent powers, wherein the Governments and Regulatory Commissions at both the central and state level have powers to make laws/regulations/rules in their respective jurisdictions.

Ministry of Power (MoP), Government of India (GoI) is the apex decision-making body in the power sector. The laws prepared by MoP, passed by the Parliament and approved by the President become statutory Acts, which are legally binding on all stakeholders. Sometimes, policies are also notified by MoP, GoI which acts as guidance to regulatory commissions and State Governments to follow. MoP is also responsible for notifying Rules pursuant to power granted to it under some of the Acts.

While MoP is responsible for providing the fundamental policy and legal framework, it does not directly deal with other aspects such as notifying regulations, licensing, tariff fixation etc. Such powers are exercised by the Central Electricity Regulatory Commission (CERC) which is an independent and statutory body at the central level. Central Electricity Authority (CEA) is another key institution in the Indian power sector. The CEA is responsible for notifying National Electricity Plan, technical standards etc.

Similar to the structure at central level, there are energy / power / electricity ministries at state level responsible for giving policy directions and legislation. State Electricity Regulatory Commissions, which are also independent statutory bodies, take care of duties such as notifying regulations, tariff fixation and licensing. The Acts notified by GoI are also binding on the state Governments and State Electricity Regulatory Commissions (SERCs).

Generation is a delicensed activity, with participation of public sector units, private entities and joint ventures. Generation projects are set-up at both inter-state and intra-state levels.

Transmission is a licensed activity, undertaken by the transmission licensees, most of which are fully Government owned. Independent Power Transmission Companies are also present at both Central and State levels which own, operate and maintain some segments of the grid. However, overall transmission planning is the responsibility of Central Transmission Utility (CTU) and State Transmission Utility (STU). System Operation is undertaken by National Load Dispatch Center (NLDC) at the central level, Regional Load Dispatch Center (RLDC) at regional level and State Load Dispatch Center (SLDC) at state level.

While NLDC and RLDC are regulated by CERC, SLDC is regulated by the respective SERC. An independent wing of the CTU runs NLDC and RLDC. SLDCs are constituted within the respective STUs, though varying levels of operational ring fencing is provided between STU and SLDC in each state.

Distribution is a licensed activity, which is mostly Government owned and is setup only at the state level or below. The tariffs are regulated by the respective SERCs. The distribution licensees have universal service obligation within their license area.

The following figure illustrates the institutional framework for Indian power sector.

**Figure 6: Indian power sector institutional framework**

|                          | Inter-state                         |                                                       | Intra-state                             |  |
|--------------------------|-------------------------------------|-------------------------------------------------------|-----------------------------------------|--|
|                          |                                     |                                                       |                                         |  |
| Legislation & Regulation | Policy and legislation              | Ministry of Power, Govt. of India                     |                                         |  |
|                          |                                     | Ministry of Power / Energy / Electricity, State Govt. |                                         |  |
|                          | Regulation and tariff determination | Central Electricity Regulatory Commission             | State Electricity Regulatory Commission |  |
|                          |                                     | Central Electricity Authority                         |                                         |  |
| Operation                | Licensing                           | Central Electricity Regulatory Commission             | State Electricity Regulatory Commission |  |
|                          | Generation                          | Inter State Generating Stations                       | Intra State Generating Stations         |  |
|                          | Transmission                        | Inter State Transmission Licensees                    | Intra State Transmission Licensees      |  |
|                          | Transmission Planning               | Central Transmission Utility                          | State Transmission Utility              |  |
|                          | System Operation                    | National and Regional Load Despatch Centers           | State Load Despatch Centers             |  |
|                          | Distribution                        |                                                       | Distribution Licensees                  |  |
|                          | Trading                             | Inter State Trading Licensee                          | Intra State Trading Licensee            |  |
|                          |                                     |                                                       |                                         |  |

### 3.3.2 Legal and policy framework for electricity trading licence

India has the most evolved policy and legal framework for electricity trading licence regime among the SAARC countries.

The Electricity Act 2003 is the fundamental legislation for the entire power sector in India. The Act defines trading as “purchase of electricity for resale thereof”.

As per Section 12 of the Act, trading is a licensed activity, to be undertaken only by authorized licensees.

*“Section 12. (Authorised persons to transmit, supply, etc., electricity):*

*No person shall*

*(a) transmit electricity; or*

*(b) distribute electricity; or*

*(c) undertake trading in electricity,*

*unless he is authorised to do so by a licence issued under section 14, or is exempt under section 13.”*

As per Section 14 of the Act, the trading licence will be granted by the appropriate regulatory commissions. (CERC at inter-state level and SERC at intra-state level).

*“Section 14. (Grant of licence):*

*The Appropriate Commission may, on an application made to it under section 15, grant a licence to any person -*

*(a) to transmit electricity as a transmission licensee; or*

*(b) to distribute electricity as a distribution licensee; or*

*(c) to undertake trading in electricity as an electricity trader,*

*in any area as may be specified in the licence...”*

Section 14 of the Act also states that a distribution licensee shall not require a licence to undertake trading in electricity.

Section 15 of the Act mainly deals with the procedure for grant of license, including trading license. The license is granted for a period of 25 years. The procedure for obtaining licence requires:

1. Application to the appropriate Commission with prescribed fees
2. Publication of notice by the applicant in two daily newspapers having circulation in each of the five regions in addition to those published from Delhi, including one economic daily newspaper .
3. Analysis of objections received against the notice by the appropriate Commission
4. Issue of public notice by the Commission about the proposed issue of licence to the applicant
5. Grant / denial of licence

It is also stipulated under this section that the appropriate Commission shall, as far as practicable, take the final decision on acceptance / rejection of the licence application within 90 days after receipt of such application.

Section 15 of the Act, along with providing the procedure for grant of licence, also deals with some of the minute details, such as:

1. Time limit within which the public notices shall be issued
2. Time limit for receipt of objections against the public notice
3. Mode of intimation to appropriate Government and other authorities informing the grant of licence

Section 19 of the Act specifies various conditions under which the Appropriate Commission may revoke the licence, after making an enquiry, and after it is satisfied that public interest requires such revocation:

- Willful and prolonged default of the provisions of Electricity Act, or the rules and regulations made under Electricity Act by the licensee
- Violation of the terms and conditions of licence by the licensee, the breach of which is expressly declared by such licence to render it liable to revocation
- Failure of the licensee to show, to the satisfaction of the Appropriate Commission, that he is in a position to fully and efficiently discharge the duties and obligations imposed on him by his licence
- Failure of the licensee to make the deposit or furnish the security, or pay the fees or other charges required for the licence
- Adverse financial position of the licensee, resulting in his inability to fully and efficiently discharge the duties and obligations of a licensee As per Section 52 of the Act, the Appropriate Commission may specify the technical requirement, capital adequacy requirement and credit worthiness for being an electricity trader. The section also states that every trading licensee shall discharge such duties, in relation to supply and trading in electricity, as may be specified by the Appropriate Commission.

Other clauses on trading licences are summarized in the following table:

**Table 1: Clauses pertaining to trading licences in India's Electricity Act 2003**

| Context                                                                                          | Section                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conditions of licence                                                                            | 16                     | Appropriate Commission may specify any general or specific conditions which shall apply either to a licensee or class of licensees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Restriction on activities of licensee                                                            | 17                     | Prior approval of the Appropriate Commission required to: <ul style="list-style-type: none"> <li>a. undertake any transaction to acquire by purchase or takeover or otherwise, the utility of any other licensee; or</li> <li>b. merge with the utility of any other licensee</li> <li>c. assign licence or transfer utility, or any part thereof, by sale, lease, exchange or otherwise, to any other entities</li> </ul>                                                                                                                                                                                                                |
| Amendment of the terms of licence                                                                | 18                     | The Appropriate Commission is empowered to amend the terms and conditions of licence if public interest so permits, either on its own, or upon an application made by the licensee. The section also lays down the procedure for amendment of licence, which consists of: <ol style="list-style-type: none"> <li>1. Issue of public notice by the licensee (in case licensee has applied for the amendment)</li> <li>2. Issue of public notice with the proposed amendment by the Appropriate Commission.</li> <li>3. Analysis of objections and replies on the public notices</li> <li>4. Decide on the amendment of licence.</li> </ol> |
| Licensing and regulation of inter-state trading                                                  | 79                     | The Central Commission's duties involve issuing licenses to electricity traders with respect to their inter-State operations. Central Commission has powers to fix the trading margin in the inter-State trading of electricity, if considered, necessary.                                                                                                                                                                                                                                                                                                                                                                                |
| Licensing and regulation of intra-state trading                                                  | 86                     | The State Commission's duties involve issuing licences to electricity traders with respect to their intra-State operations. State Commission has powers to fix the trading margin in the intra-State trading of electricity, if considered, necessary.                                                                                                                                                                                                                                                                                                                                                                                    |
| Investigation on licensee                                                                        | 128                    | The appropriate Commission is empowered to direct an investigating authority to investigate the affairs of the licensee, if the Commission is satisfied that the licensee has failed to comply with any of terms and conditions of licence or failed to comply with the applicable legal framework.                                                                                                                                                                                                                                                                                                                                       |
| Restriction on transmission licensees and system operators against indulging in trading business | 26, 27, 31, 38, 39, 41 | NLDC, RLDCs, SLDCs, CTU, STUs and transmission licensees shall not engage in the business of trading in electricity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

In comparison to the comprehensive legal framework for trading licensees provided in the Electricity Act, the National Electricity Policy 2005 and Tariff Policy 2016 do not cover aspects related to trading licensees in detail.

The National Electricity Policy views trading as one of the enablers for market development and competition. For achieving the same, the Policy recommends the Central Commission to grant inter-state trading licences with authorization to trade throughout the country. The policy also underscores the need for notifying enabling regulations for inter and intra State trading, and power exchanges.

Tariff Policy 2016 stipulates that the Appropriate Commission should monitor the trading transactions continuously and ensure that the electricity traders do not indulge in profiteering in situation of power shortages. The Tariff Policy suggests the fixing of trading margin, as allowed under the Electricity Act, to achieve the purpose of keeping trading transactions in check.

### 3.3.3 Regulatory framework for electricity trading license

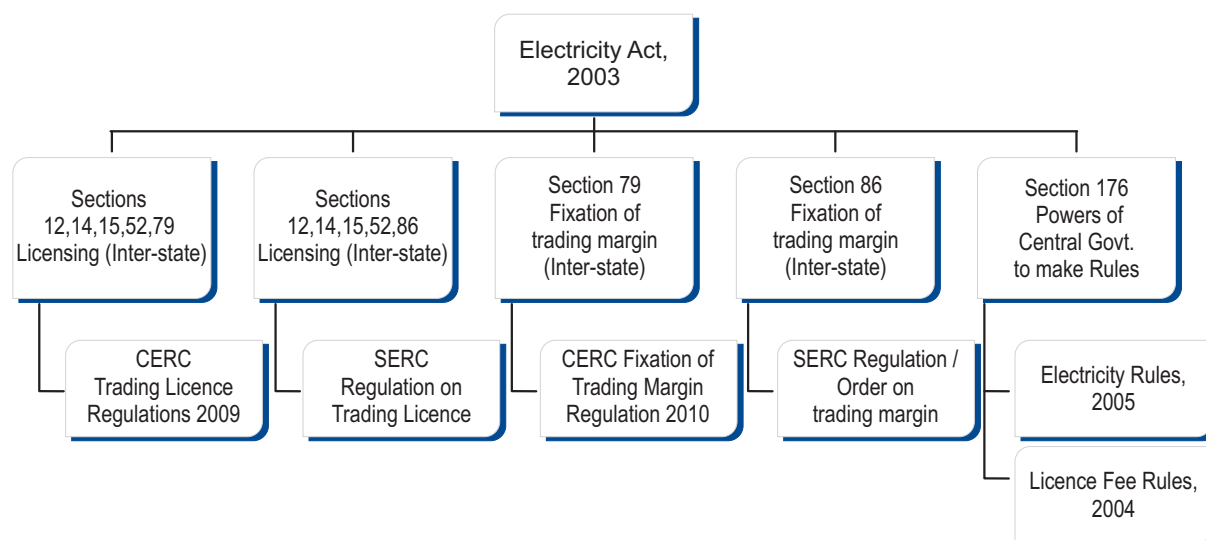
The regulatory framework for trading licensee regime directly flows from the powers granted to the regulatory commissions under the Electricity Act, 2003.

At the central level, for inter-state trading, the powers granted to the Central Commission on licensing of electricity trading, under sections 12,14, 15, 52 and 79 have been utilized to notify the CERC (Procedure, Terms and Conditions for grant of licence and other related matters) Regulations, 2009. The powers granted under section 79 have been utilized to notify the CERC (Fixation of Trading Margin) Regulations, 2010.

Similar to the central level, many of the State Electricity Regulatory Commissions have notified regulations for grant of trading licence, under powers granted to it under sections 12, 14, 15, 52 and 86 of the Electricity Act, 2003. The fixation of trading margin, as allowed under Section 86 of the Electricity Act, 2003 is integrated in some cases in the same regulation, and in some cases as a separate regulation.

Summary of the regulatory framework is diagrammatically depicted below:

**Figure 7: Summary of the regulatory framework for trading licence in India**



## CERC Trading Licence Regulations, 2009

CERC (Procedure, Terms and Conditions for grant of licence and other related matters) Regulations, 2009, and its amendments deal with the following aspects of trading licence for inter-state operations:

- i. Categories of trading licence
- ii. Requirements for being an electricity trader
- iii. Procedure for grant of licence
- iv. Terms and conditions of licence
- v. Revocation of licence
- vi. Contravention and penalties

### i. Categories of trading licence

The CERC Regulations stipulate four different categories of trading licences, depending on the volume of electricity proposed to be traded in a year, including intra-state trading, where applicable.

**Table 2: Category of trading licenses in India**

| Category of the Trading Licence | Volume of Electricity proposed to be traded in a year including intra-State trading, where applicable |
|---------------------------------|-------------------------------------------------------------------------------------------------------|
| Category I                      | No limit                                                                                              |
| Category II                     | Not more than 1500 Million units                                                                      |
| Category III                    | Not more than 500 Million units                                                                       |
| Category IV                     | Not more than 100 Million units                                                                       |

### ii. Requirements for being an electricity trader

The minimum qualification requirements are summarized below. These requirements are to be met, both while applying for the licence and during the entire licence period.

**Table 3: Requirements for grant of trading licence in India**

| Qualification           | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Domicile                | <p>Applicant shall be a citizen of India, or a partnership firm registered under the Indian Partnership Act, 1932 (9 of 1932) or a company incorporated under the Companies Act, 1956 (1 of 1956) or an association or body of individuals who are citizens of India whether incorporated or not or an artificial juridical person recognized under the Indian Laws.</p> <p>The applicant should have been authorized to undertake trading in electricity in accordance with its constitutional/organizational documents.</p> |
| Technical Qualification | <p>The applicant shall have at least one full-time professional having, qualifications and experience in each of the following disciplines, namely:-</p> <ul style="list-style-type: none"><li>• Power system operations and commercial aspects of power transfer – Degree in Engineering with at least 10 years' experience in the field</li><li>• Finance, commerce and accounts - CA/ICWA/MBA(in Finance) with at least 5 years' experience in the field</li></ul>                                                         |

| Qualification           | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Financial Qualification | <p>The minimum net worth of the applicant on the date of application, as per audited special balance sheet accompanying the application, shall not be less than the amounts specified hereunder:</p> <ul style="list-style-type: none"> <li>• Category I License – Rs. 50 crore</li> <li>• Category II License – Rs. 15 crore</li> <li>• Category III License – Rs. 5 crore</li> <li>• Category IV License – Rs. 1 crore</li> </ul> <p>The applicant shall also have minimum current ratio of 1:1 and liquidity ratio of 1:1 on the date of audited special balance sheet accompanying the application.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Other Requirements      | <p>The applicant shall not be qualified for grant of licence if:</p> <ul style="list-style-type: none"> <li>• The applicant, or any of his associates, or partners, or promoters, or Directors is an undischarged insolvent; or</li> <li>• The applicant, or any of his associates, or partners, or promoters, or Directors has been convicted of an offence involving moral turpitude, fraud, or any economic offence in the last three years and a period of 6 months has not elapsed in case of release from imprisonment.</li> <li>• An order revoking the licence of the applicant, or any of his associates, or partners, or promoters, or Directors has been passed by the Commission under Section 19 of Electricity Act, 2003 in the last three years.</li> <li>• The applicant holds a licence for transmission of electricity</li> <li>• The applicant, or any of his associates, or partners, or promoters, or Directors has been found guilty in any proceedings of the Commission for non-compliance of the legal and regulatory framework on electricity in the last three years</li> </ul> |

### iii. Procedure for grant of licence

The regulatory procedure for the grant of inter-state trading licence is summarized in the following process diagram:

Model Framework for Trading Licence Regime and Guidelines for grant of trading licence to facilitate Cross Border Electricity Trade in South Asia Region.



The detailed procedure is described in the table below:

**Table 4: Procedure for grant of inter-state trading licence in India**

| Key Step                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1: Ensuring the compliance of qualification requirements along with preparation of special balance sheet | <p>The applicant will have to ensure that he meets all the qualification criteria, and will have to arrange supporting documents to substantiate the same. This may include –</p> <ul style="list-style-type: none"> <li>• Preparation of audited special balance sheet to satisfy financial criteria</li> <li>• Forecast of trading volume (to determine licence category)</li> <li>• Recruitment of qualified staff</li> <li>• Amendment of memorandum of association, if required, to include trading business, etc.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Step 2: Preparation and submission of license application                                                     | <p>The application for grant of licence is to be prepared as per Form I (Annexure I) of the Trading Licence Regulations, and submitted to CERC along with a covering letter, supporting documents and proof of payment of licence application fee (Rupees One Lakh).</p> <p>The following documents are submitted along with the Form I:</p> <ul style="list-style-type: none"> <li>• Details of payment of application fees for grant of licence</li> <li>• Certificate of incorporation/registration</li> <li>• Certificate for commencement of business, where applicable</li> <li>• Memorandum of Association and Articles of Association</li> <li>• Original power of attorney in favor of the signatory to commit the applicant</li> <li>• Auditor's certificate of Net worth</li> <li>• Auditor's certificate of Current and Liquidity Ratio</li> <li>• Annual reports, Audited accounts, Director's report, Auditor's report, Schedules and notes on account for one year immediately preceding the year of application</li> <li>• Audited Special Balance Sheet for any day falling within 30 days preceding the date of application</li> <li>• Note on Organizational and Managerial Capability including organizational structure, curricula vitae of various executives, proposed office and communication facilities, etc.</li> <li>• Note on Approach and Methodology for establishment of trading arrangements</li> <li>• Details of shareholding</li> <li>• List of Directors</li> <li>• Copy of Income Tax Registration (PAN)</li> <li>• Certified true copy of Board Resolution authorizing the filing of Application for grant of Trading Licence</li> <li>• Affidavit verifying the contents of the Application</li> <li>• Affidavit about not undertaking any business of transmission of electricity as a transmission licensee.</li> </ul> |

| Key Step                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 3: Public notice on license application         | <p>The applicant shall post complete application along with annexures and enclosures on his own website so as to facilitate access to the application by any person through internet and shall keep them on the website till the disposal of his application.</p> <p>The applicant shall within 7 days after making such application, publish a notice of his application, in two daily newspapers having circulation in each of the five regions in addition to those published from Delhi, including one economic daily newspaper as per Form II of the Trading License Regulations.</p> <p>The applicant may file his reply to the objections or suggestions received in response to the notice within 45 days of its publication in the newspapers.</p> |
| Step 4: CERC's initial proceedings and public notice | <p>The Commission after consideration of the objections/ suggestions received in response to the notice published by the applicant and his reply may propose to grant licence. Before proposing the same, Commission might conduct hearings, and ask for any clarifications or additional information if required.</p> <p>When the Commission proposes to grant trading licence, it will publish a notice of its proposal in two daily newspapers, as the Commission may consider appropriate, stating the name and address of the person to whom it proposes to issue the licence, with such other details as the Commission considers appropriate, to invite further objections or suggestions to its proposal.</p>                                       |
| Step 5: CERC's final proceedings                     | <p>On consideration of further objections/ suggestions received and the reply of the applicant thereto, if any, the Commission may grant the licence (as per Form III of the Trading License Regulations) or reject the application, for reasons to be recorded in writing if the application does not conform to the provisions of the Act, the rules or the regulations or provisions of any other law for the time being in force.</p>                                                                                                                                                                                                                                                                                                                   |
| Step 6: Payment of license fee                       | <p>Once the licence is granted, the licensee will have to pay the annual fees as given in CERC (Payment of Fees) Regulations, 2012:</p> <ul style="list-style-type: none"> <li>• Category I License – Rs. 40 Lakh</li> <li>• Category II License – Rs. 15 Lakh</li> <li>• Category III License – Rs. 6 Lakh</li> <li>• Category IV License – Rs. 3 Lakh</li> </ul> <p>The fees have to be paid within 30 days of the date of grant of licence and thereafter, annually by 30th April of each year.</p>                                                                                                                                                                                                                                                      |

#### iv. Terms and conditions of licence

The licence has to comply with various terms and conditions as per the Trading License Regulations. Contravention of these obligations may result in imposition of penalties and may even result in cancellation of the licence. Some of the major terms and conditions of the licence are:

- Licensee shall not charge any amount exceeding the trading margin for the inter-state trading in electricity, fixed by the Commission from time to time.
- Licensee shall continue to be governed by the qualification and disqualification criteria specified at the time of application for licence, and compliance on those factors needs to be maintained throughout the period of licence.

- Licensee shall establish adequate communication facilities like telephone, fax, computer, internet facilities etc. before undertaking trading.
- Licensee shall ensure that he enters appropriate agreement for purchase and sale of electricity with the sellers and buyers prior to scheduling a transaction.
- Licensee shall regularly pay the annual licence fee.
- Licensee shall not omit or neglect to undertake trading activity.
- Licensee shall designate one of its officers as Compliance Officer who shall be the nodal officer for communication with the Commission.
- Licensee shall keep accounts of the business covered by the licence separate from any other business.
- Licensee shall furnish monthly information on its trading activities as per Form IV A-H, and weekly information on OTC contracts as per Form IV J to the Commission and shall also post it on its website.
- Licensee shall furnish annual return of all transactions, certified by CA or Cost Accountant by 31st May of every year as per Form IV K.
- Licensee shall furnish performance details on an annual basis as per Form V.
- The Commission is empowered to amend the terms and conditions of licence, if public interest so permits, either on its own, or upon an application made by the licensee. The procedure will be similar to that adopted for grant of license.

#### **v. Revocation of licence**

The licence may be revoked either upon an application made by the licensee, or by the Commission after enquiries, and after serving notice period of three months. The circumstances in which revocation of licence may be resorted to by the Commission include:

- a. Where the licensee, in the opinion of the Commission, makes willful and prolonged default in doing anything required of him by or under the Act, or the Rules or the Regulations;
- b. Where the licensee breaches any of the terms and conditions of his licence, the breach of which is expressly declared by such licence to render it liable to revocation;
- c. Where the licensee fails, within the period fixed in this behalf by his licence, or any longer period which the Commission may allow thereof, to show to the satisfaction of the Commission, that he is in a position to fully and efficiently discharge the duties and obligations vested in him by his licence;
- d. Where in the opinion of the Commission the financial position of the licensee is such that he is unable to fully and efficiently discharge the duties and obligations vested in him by his licence;
- e. Where the licensee has neglected to undertake trading in electricity;
- f. Where the licensee fails to meet the qualifications specified for making an application or incurs any of the disqualifications under these regulations;
- g. Where the licensee fails to submit the information as required in accordance with the regulations 9 (submission of information), 10 (standards of performance) and 11 (prudential reporting) or knowingly furnishes false and wrong information.

#### **vi. Contravention and penalties**

In case the Commission finds that the licensee is contravening, or likely to contravene the terms and conditions of licence, it shall serve a notice to the licensee regarding the same. The

Commission shall also publish a public notice on the same. After consideration of objections and replies from the licensee, and from persons affected or likely to be affected by the non-compliance of the licensee, the Commission will pass orders / directions necessary to secure compliance on the part of the licensee.

The contraventions are grouped as serious and non-serious. The serious contraventions consist of:

- Violations and non-compliance of the provisions of the Act, Rules and the Regulations specified by the Commission, particularly, CERC's Regulations on Trading Licence, Open Access, Trading Margin, Payment of Fees, Power Market and Grid Code.
- Deliberate under-reporting of transaction volume in monthly reporting;
- Non-compliance of the orders of the Commission including the orders issued for contravention of any regulation of the Commission;
- Willful, repeated and persistent violation of non-serious contraventions;
- Non-payment of the licence fees and surcharge if applicable within the due date as specified in Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

The non-serious contraventions consist of:

- no-submission or delay in submission of any report required to be submitted by the licensee under any of the CERC Regulations on Trading License, Open Access, Trading Margin, Payment of Fees, Power Market and Grid Code;
- delay in submission of monthly transaction information;
- delay in submission of any other information sought by the Commission ;
- failure to make mandatory disclosures or reporting in accordance with the proviso to clause (b) of Regulation 9 of these regulation on licensee's website

Where the charge of serious contraventions is established against the licensee in the proceedings, the Commission may:

- a. direct that the licensee shall pay, by way of penalty, a sum which shall not exceed rupees one lakh for each contravention; and /or
- b. debar the licensee, from trading in short term market or medium term market or through power exchanges for a period not exceeding one year; or
- c. suspend the licence for trading in electricity for a period not exceeding one year; or
- d. revoke the licence; or
- e. issue such other directions or impose such other condition as the Commission may deem appropriate.

Where the charge of non-serious contravention has been established against the licensee in the proceedings, the Commission may:

- a. give warning to the licensee subject to such conditions as may be deemed fit in the facts and circumstances of the case; or
- b. direct that such person shall pay, by way of penalty, a sum which shall not exceed rupees one lakh; or
- c. issue such other directions or impose such other conditions as the Commission may deem appropriate.

### **CERC Fixation of Trading Margin Regulations 2010**

The CERC (Fixation of Trading Margin) Regulations, 2010 has imposed a trading margin cap

of 7 paise/kWh in case where the sale price is more than 3 Rs./kWh, and a trading margin cap of 4 paise/kWh where the sale price is less than or equal to 3 Rs./kWh. The cap is cumulative, when more than one trading licensee is involved in the overall transaction.

*“4. Trading Margin: The licensee shall not charge trading margin exceeding seven (7.0) paise/kWh in case the sale price is exceeding Rupees three (3.0)/kWh and four (4.0) paise/kWh where the sale price is less than or equal to Rupees three (3.0)/kWh. This margin shall include all charges, except the charges for scheduled energy, open access and transmission losses. The trading margin shall be charged on the scheduled quantity of electricity.*

*Provided that trading margin specified under these regulations shall be the cumulative value of the trading margin charged by all the traders involved in the chain of transactions between the generator and the ultimate buyer, that is to say, trading margin in case of multiple trader-to-trader transactions shall not exceed the ceiling trading margin specified under these regulations.*

*Explanation: The charges for the open access include the transmission charge, operating charge and the application fee.”*

The trading margin is applicable for all inter-state trading contracts where the duration of the power purchase agreement and power sale agreement is less than one year.

However, it may be noted that the above trading margin is applicable only to the inter-state trading of electricity. The intra-state transactions undertaken by the inter-state trading licensees are outside the purview of these Regulations. Such transactions will be covered under the trading margin regulation / order of the respective SERC, if present.

### **Electricity Rules, 2005**

Clause 9 of the Govt. of India's Electricity Rules, 2005 declares that an inter-state electricity trading licensee can buy or sell electricity within the same state, without obtaining a separate intra-state electricity trading licence.

*“9. Inter-State trading Licence.- A licence issued by the Central Commission under section 14 read with clause (e) of sub-section (1) of section 79 of the Act to an electricity trader for Inter-State Operations shall also entitle such electricity trader to undertake purchase of electricity from a seller in a State and resell such electricity to a buyer in the same State, without the need to take a separate licence for intra-state trading from the State Commission of such State.”*

This clause in the Electricity Rules, 2005 has made it convenient for applicants to apply only once at CERC for grant of inter-state trading license, and undertake both inter-state and intra-state trading throughout the country.

### **Licence Fee Rules, 2004**

As per Govt. of India's “Fees for Making Application for Grant of Licence Rules, 2004” dated 23rd March 2004, every application under section 14 for grant of licence by the Central Electricity Regulatory Commission, shall be accompanied by a fee of Rupees one lakh.

### **Electricity trading licensees and cross border electricity trade**

Ministry of Power, Govt. of India notified the “Guidelines on Cross Border Trade of Electricity” on December 2016. The guidelines were prepared in order to facilitate and promote cross border trade of electricity with greater transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perception of regulatory risks.

As per the guidelines, import of electricity by Indian entities (which includes trading licensees too) is permitted, subject to the nature of ownership of the generation project / trading licensee of the source country. However, in case of export, only distribution licensees and Public Sector Undertakings have been given explicit approval. Approval for other cases such as export by a trading licensee will require approval from the Designated Authority on a case to case basis.

On February 2017, CERC notified the draft of Regulations on Cross Border Trade of Electricity, which is based on the guidelines of Union Ministry of Power. As per these draft regulations, inter-state trading licensees located in India or neighboring countries can also apply for open access. Participating entities, other than those explicitly mentioned in the guidelines and regulations, shall be eligible to participate in the Indian Power Exchange(s) through the trading licensees in accordance with the CERC (Power Market) Regulations, 2010

## Electricity trading licensees at intra-state level

Various SERCs have notified their own regulations for intra-state trading licence, sometimes including the fixation of trading margin too.

Some of the examples are:

**Table 5: State level regulations on trading licence in India**

| State         | Regulations related to trading licence                                                                                                            |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Assam         | AERC (Procedure, Terms and Conditions for granting an Intra-State Trading Licence and other related matters) Regulations, 2005                    |
| Bihar         | BERC (Licence for Intra-State Trading in electricity) Regulations, 2007                                                                           |
| Gujarat       | GERC (Licence for Electricity Trading) Regulations, 2005<br>GERC (Fixation of Trading Margin) Regulations, 2011                                   |
| Maharashtra   | MERC (Trading Licence Conditions) Regulations, 2004                                                                                               |
| Uttar Pradesh | UPERC (Procedure Terms & Conditions for grant of Trading Licence for Intrastate Electricity Trader and other related provisions) Regulation, 2004 |
| West Bengal   | WBERC (Licence and Conditions of Licence) Regulations, 2013                                                                                       |

The trading licence regulations of SERCs are fundamentally similar to that of CERC, and include categories of trading licence, qualification criteria etc. However, in the context of cross border trade, SERCs Regulations are not relevant.

### 3.3.4 Operational framework for electricity trading licence

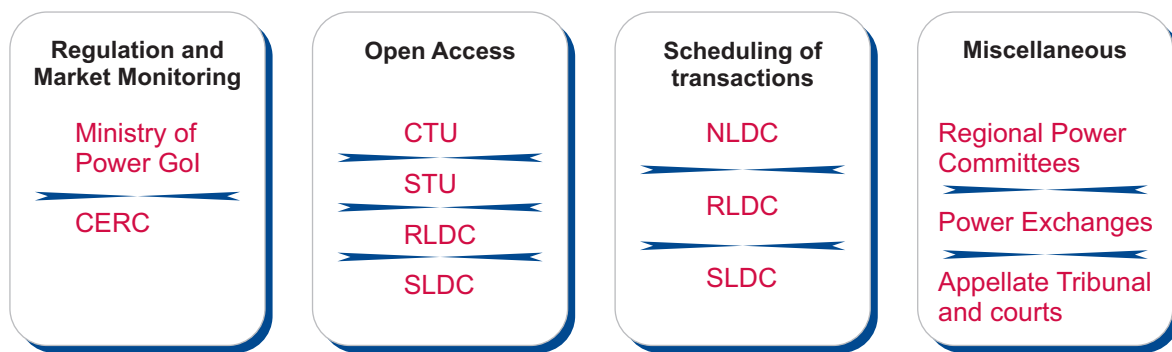
Bulk of the operational aspects of electricity trading licence are already covered in the Electricity Act 2003 and in CERC's regulations on trading licensees.

### 3.3.5 Institutional framework for electricity trading licence

Trading has become a well-established business in the Indian power sector. As of 31 March 2016, there were 40 inter-state trading licensees, as per data made available by CERC. Of these, 16 had Category I licences. In 2015-16, the volume of electricity transacted by the electricity traders was 35.43 BU, which is 50.31% of the total electricity transacted through traders and power exchanges.

The well-developed institutional framework for trading licensees may be considered as one of the crucial factors behind the development of trading business in the country. A summary of the institutional framework for electricity trading licence in India is depicted below.

**Figure 9: Institutional framework for trading licence in India**



As discussed earlier, the Ministry of Power is responsible for legislation (Electricity Act 2003), framing of policies (National Electricity Policy 2005, Tariff Policy 2016) and framing of rules (Electricity Rules 2005). The Central Electricity Regulatory Commission is responsible for regulation of inter-state trading licensees, including licensing and fixation of trading margin. The economics division of CERC monitors the trading activities of the inter-state licensees, and compiles monthly and yearly reports. The division also undertakes compliance monitoring with respect to trading regulations and trading margin regulations.

The trading licensees may either directly apply, or apply on behalf of buyers / sellers for open access. Depending on the nature of open access and injection / drawal entities, CTU / STU / RLDC / SLDC may act as the nodal agencies. For inter-state open access, while CTU is the nodal agency for long term and medium term open access, NLDC is the nodal agency for short-term open access. For intra-state open access, the nodal agency depends on the Open Access Regulations of the state. However, usually, STU acts as the nodal agency for long-term and medium-term open access, and SLDC acts as the nodal agency for short-term open access.

The National / Regional and State Load Dispatch center handles scheduling of inter-country / inter-state / intra state transactions. The Regional Power Committees coordinate the energy accounting and settlement process, by maintaining the monthly Regional Energy Accounts and weekly Deviation Settlement accounts.

Power exchanges act as an additional platform for electricity traders to participate in bulk sell / buy deals. The power exchange market in India has a comparable volume as that of bilateral OTC market.

The appellate tribunal / courts act as forum for providing dispute resolution against the orders of the regulatory commission.

## 3.4 Nepal

### 3.4.1 Institutional framework for electricity

The power sector in Nepal is under the jurisdiction of the Ministry of Energy (Erstwhile Ministry of Water and Resources, or MOWR). The Department of Electricity Development (DoED) was formed in 1992 under the MOWR as the Electricity Development Center. The Water and Energy Commission (WEC), established to develop water and energy resources in an integrated and accelerated manner, primarily assists the Government of Nepal, the Ministry of Energy, and other related agencies in the formulation of policies and planning of projects in the water resources and energy sectors.

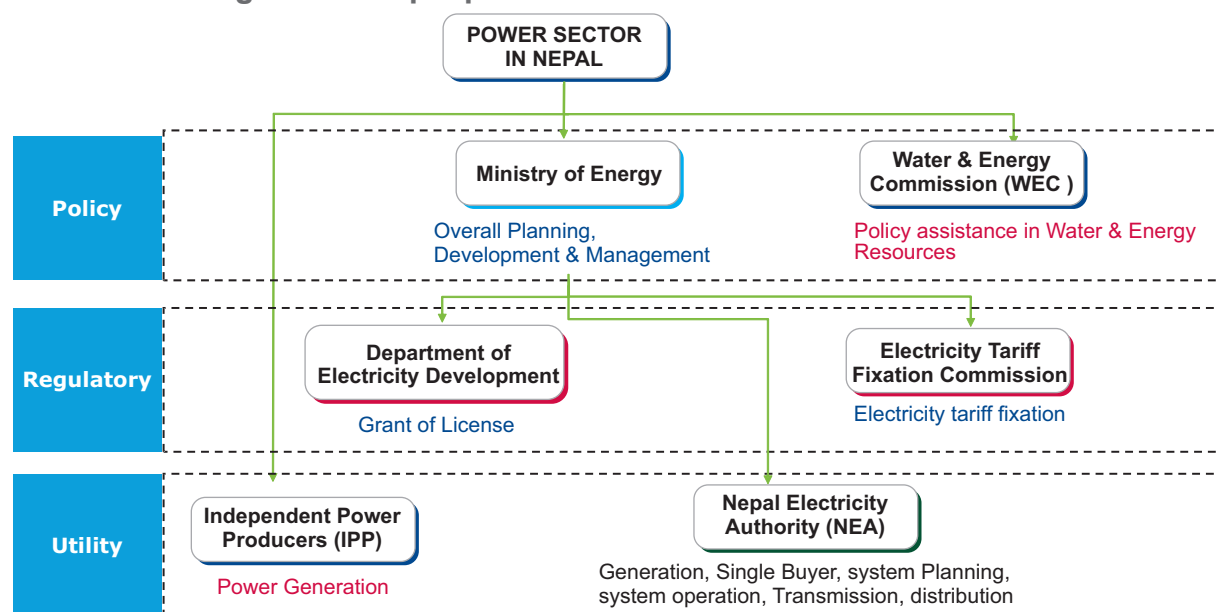
DoED, currently under the jurisdiction of Ministry of Energy, is responsible for all matters relating to bilateral and multilateral dialogues, agreements and understandings regarding electricity. The consumer tariffs are regulated by the Electricity Tariff Fixation Commission

(ETFC), which was formed in 2011. The Ministry is the licensing as well the regulatory authority for the power sector in Nepal. There is currently no independent electricity regulator though the draft Nepal Electricity Regulatory Commission Act, which is pending before the Nepal Parliament, proposes to establish an electricity regulator in the country.

Nepal Electricity Authority (NEA) is a government institution and is primarily responsible for the generation, transmission, and distribution of electricity in Nepal. It undertakes system planning studies including demand forecasts and generation planning. The power trade department of NEA is responsible for trading of electric power both in terms of domestic and cross border market. NEA has the single window interface for Independent Power Producers (IPPs) for processing their application for Power Purchase Agreements (PPA). NEA is in the process of unbundling its vertically integrated structure to improve operational efficiency. Nepal is also characterized by private sector participation in electricity generation.

The following figure illustrate power sector arrangement in Nepal.

**Figure 10: Nepal power sector institutional framework**



### 3.4.2 Legal and policy framework for electricity trading licence

The legal framework for the electricity industry is provided by the Electricity Act 1992. The survey, generation (production), transmission and distribution are licensed activities under Nepal Electricity Act 1992. Licence is not required for production of electricity up to 1 MW and information need to be shared for generation, transmission and distribution of 0.1 MW to 1 MW of power.

However, the Act does not make any mention of trading as a separate licensed activity or licensees indulging only in trading activity.

A comprehensively revised Electricity Act 2008 has been under the consideration of the Government for some time. However, this new Act is yet to be approved by the parliament. The proposed new Act envisages trading as a separate licensed activity. Some of the aspects related to the trading licence regime under the new Act are as follow:

- Trading is acknowledged as a separate licensed activity.
- Definition of trading covers buying and selling, import and export of electricity.
- License period of 25 years for the trading licensee.

- Trading licence to be granted by the Government.

However, there has been slow progress in getting the new Electricity Act 2008 notified.

The agreement between the Government of Nepal and Government of India on electric power trade, cross-border transmission interconnection and grid connectivity, commonly referred as Power Trade Agreement (PTA) also mentions that

*“Article-IV-The Parties shall allow the authorized/licensed electricity producers / buyers / traders of each country to engage in cross-border electricity trading, including that through Power Exchanges, and to seek cross-border transmission access as per the laws of the respective country “.*

#### **Nepal Electricity Regulatory Commission Act 2017**

In September 2017, the President of Nepal gave his assent to the “Nepal Electricity Regulatory Commission Act, 2017”. The Act proposes a comprehensive overhaul of the regulatory framework for power sector in Nepal with the proposed establishment of an independent electricity regulatory commission.

The new Act has the following provisions (*based on unofficial English translation*) with respect to trading:

- Electricity Regulatory Commission is established as a regulatory body for electricity generation, transmission, distribution or trade.
- Licensed person means the person or corporate body licensed under the prevalent law to generate, transmit, distribute or trade in electricity
- The Electricity Regulatory Commission shall prescribe conditions for the conduct of electricity trade and monitor the same on regular basis
- The Electricity Regulatory Commission shall determine purchase-sale rate and procedure of sale and purchase of electricity for a distribution licensee, generation licensee, trade licensee
- The Electricity Regulatory Commission shall make provision of open access in the electricity system
- The Electricity Regulatory Commission shall determine the process for the establishment of whole sale market of electricity
- The Electricity Regulatory Commission is yet to be constituted as of 01 November 2017. When the regulatory commission becomes operational, it can be expected that a regulatory framework for trading business in Nepal will also evolve.

### **3.4.3 Regulatory framework for electricity trading licence**

The regulatory framework currently covers only import and export of electricity.

Electricity Regulation 1993 provides the rules which were notified under the Electricity Act 1992. As per Clause 23 of Electricity Regulation 1993, if a licensee who has obtained a licence for production, transmission or distribution wants to import electricity into Nepal, he may apply for the same with detail of import arrangement. Government of Nepal after consideration may grant permission to import the same.

As per the Hydropower Development Policy 2001, Licence may be granted by the Government to export electricity from projects with installed capacity of more than 100 MW.

Once the Nepal Electricity Regulatory Commission is constituted, it is expected to notify regulations that enable the trading licensees to participate in the power market.

### 3.4.4 Operational framework for electricity trading licence

Nepal currently also does not have any operational framework for grant of electricity trading licence.

### 3.4.5 Institutional framework for electricity trading licence

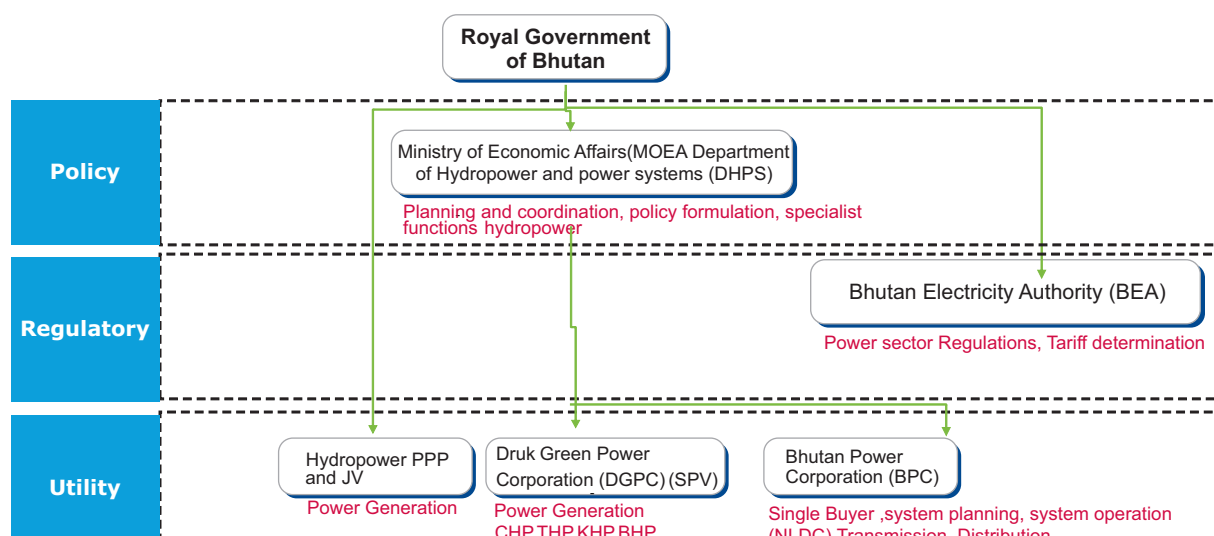
Nepal currently also does not have any operational institutional framework for grant of electricity trading licence. Once the Nepal Electricity Regulatory Commission is constituted, it is expected to take over the regulation of trading licensees.

## 3.5 Bhutan

### 3.5.1 Institutional framework for electricity

The following figure illustrate power sector arrangement in Bhutan.

Figure 11: Bhutan power sector institutional framework



The Department of Hydropower and Power Systems (DHPS), which reports to the Ministry of Economic Affairs, is the Government body leading and coordinating the activities of the various Royal Government of Bhutan (RGoB) organizations involved in the planning and development of the country's large hydropower resources (> 25 MW). Its role includes the formulation of national policies and guidelines related to hydropower development, implementation of the institutional reforms, providing an enabling environment for the participation of public and private sectors in development of hydropower resources, and ensuring that hydropower exports generate maximum revenue for the nation.

DHPS consists of three Divisions: Planning and Coordination, Hydropower Development, and Transmission and Power Systems. It also has a mandate to develop its manpower skills in hydropower development and management. It was created when the previous Department of Energy was unbundled in 2011, and the Department of Renewable Energy and Department of Hydro-met Services were formed.

The Bhutan Electricity Authority (BEA) is the electricity regulator. It is as an autonomous agency established under the Electricity Act of Bhutan (2001) to:

- restructure and regulate the electricity supply industry;
- govern private sector participation in the electricity supply industry based on RoGB Policy
- empower RGoB to create companies for carrying out all or any of the purposes of the Electricity Act.

Bhutan Power Corporation Limited (BPC) was formed as a public utility in July 2002. The role of BPC is to distribute electricity throughout the country and to provide transmission access for generating stations for domestic supply as well as export. BPC has the duty to ensure that a reliable and adequate electricity supply is available to all consumers within Bhutan.

The Druk Green Power Corporation (DGPC) is a wholly owned corporate entity of the RGoB. It is an autonomous body; it operates and maintains the large hydropower assets of the nation. At present these include the Chukha, Kurichhu, Basochhu and Tala projects with an aggregate installed capacity of 1,606 MW that includes 126 MW Dagachhu-I HPP. DGPC also has a mandate to promote and develop new hydropower stations using the PPP mode, and in this capacity it is currently the lead sponsor in the development of the 126 MW Dagachhu project (59% equity) and in the 118 MW Nikachhu project.

### **3.5.2 Legal and policy framework for electricity trading licence**

The legal framework for the electricity industry is provided by the Electricity Act of Bhutan, 2001. One of the objectives of the Act was to enhance revenue generation through export of electricity.

As per the Act, the licensed activities include export and import of electricity.

#### *“18 Duty to obtain a licence*

*18.1 No person or entity shall engage in, construction, generation, transmission, system operation, distribution, sale, export or import of electricity without a licence issued under this Act.”*

The Act specified that a corporation may apply to Bhutan Electricity Authority for the grant of licence to engage in trading. Corporation is defined under the Act as having the same meaning as that of “body corporate” in Bhutan Companies Act. As per Companies Act 2000 and 2016 of Bhutan, body corporate includes companies that have been incorporated outside Bhutan.

#### *“22 Application for licence*

*22.1 A corporation may apply to the Authority for the issue of a licence authorizing one or more of the following activities as are specified in the licence:*

- i) to generate electricity;*
- ii) to transmit electricity;*
- iii) to bulk supply;*
- iv) to distribute electricity;*
- v) to supply electricity;*
- vi) to trade in electricity; and*
- vii) to acquire a licence from another party.”*

It may be noted that while section 18 deals with the requirement for a licence for “export and import of electricity”, section 22, which deals with the license application, mentions the licence to “trade in electricity”. Probably, the intent was to allow trading for the limited purpose of cross border export and import of electricity.

Many functions related to licensing have been entrusted to Bhutan Electricity Authority under the Act. These include:

- Specifying the requirements for licensees’ reporting, accounting and issuance of information to the Authority.
- Specifying and collecting the fees, levies, charges or royalties to be paid by the licensees. (Though license fee is prescribed by the Authority, it needs to be approved by the Minister who is assigned with the responsibility of electricity sector)

- Process applications and issue, modify and revoke licences for generation, transmission, system operation, export, import, distribution and sale of electricity.
- Monitor the performance of licensees and their compliance of the provisions of this Act, regulations, standards, codes, licences and contracts approved by the Authority and concession agreements entered between the Minister and Licensees.
- Impose any fines, sanctions or penalties for any breach of provisions of relevant legal / regulatory framework.
- Establish a dispute resolution process and settle disputes between licensees and between licensees and customers.

The Act empowers Bhutan Electricity Authority to specify the application form and the modalities of application according to the type and extent of impacts of the project or operation applied for. The Authority has also been allowed to prescribe the amount of licence application fees.

While most of the functions related to licensee operations are entrusted to the Authority, a few are entrusted to the Minister who is responsible for electricity sector. These functions include:

- Set service provision of Licensee
- Provide policy on Licensee standards
- Approve Licence Fee.

The application procedure for a licence (such as trading license), as per the Electricity Act of Bhutan, 2001, is provided below. However, it may be noted that the procedure is common for all categories of licences as no separate provision is made for trading licence.

**Table 6: Procedure for licence application in Bhutan**

| Key Step                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1:<br>Preparation and submission of licence application | <p>An application for a licence must be submitted to the Authority in the prescribed form supplied by the Authority and accompanied by the following documents and the prescribed application fees:</p> <ol style="list-style-type: none"> <li>the legal and financial status of the applicant;</li> <li>a technical and economic description of the project;</li> <li>a description of how the project fits in with the existing and planned electricity supply system;</li> <li>the planned time of commencement and completion of the construction of the project;</li> <li>a view of the project's adaptation to the landscape, including necessary maps and drawing;</li> <li>the impact of the project on public interests and possible mitigation;</li> <li>a summary and conclusions of assessments and studies, including environmental impact assessment;</li> <li>impacts of the project on private interests, including the interest of the affected landowners and holders of other rights;</li> <li>proposed tariff calculation;</li> <li>consents and permit required under any other law;</li> <li>complete prepared reports relating to the assessments and studies carried out; and</li> <li>any other documents required by the Authority.</li> </ol> |
| Step 2:<br>Acceptance of application                         | <p>The Authority shall as soon as possible after receipt of an application either request additional information or confirm in writing to the applicant that the application is complete in all aspects.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Key Step                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 3:<br>Advertisement<br>of licence<br>application                                                                  | The Authority, after confirming that the application is complete in all aspects, will publish a notice in at least one national newspaper of wide circulation. Among other things, the notice will contain a description of the nature and location of project, and an invitation to any affected party to lodge objections within a specified time, being not less than thirty days from the date of the notice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Step 4: Analysis<br>of license<br>application<br>with respect to<br>factors specified<br>in Act and Govt.<br>policies. | <p>When granting or rejecting applications, the Authority shall take into consideration, Govt. policies and as far as adequate the following aspects:</p> <ol style="list-style-type: none"> <li>the needs for electricity, or revenues for export of electricity, of the country, region or community;</li> <li>the impact of the operation of the undertaking on the social, cultural and recreational life of the community;</li> <li>the needs to protect the environment and to conserve the natural resources;</li> <li>land use and siting or route of the project;</li> <li>the costs of the project;</li> <li>the ability of the applicant to operate in a manner designed to protect the health and safety of users of the service for which the licence is required and other members of the public who would be affected by the operations of the applicant;</li> <li>the technical, economic and financial capacity of the applicant to render the service for which the licence is required;</li> <li>energy efficiency;</li> <li>any representations and objections made by affected parties;</li> <li>the price or tariff offered; and</li> <li>other public and private interests affected by the operation for which the licence is required.</li> </ol> |
| Step 5:<br>Communication<br>of decision                                                                                | The Authority shall after having decided whether to grant or reject an application for a licence, produce a statement of reasons within thirty days after making the decision. The statement shall be issued to the applicant, and it shall be made available to interested parties on request.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

Other provisions related to licensing, that may apply to export/import/trading licenses are summarized below:

**Table 7: Provisions related to licensing in Bhutan Electricity Act 2001**

| Context                                 | Section | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Multiple licences                       | 27      | Nothing in this Act shall prevent the holder of a licence who has fulfilled all the necessary obligations, from applying for and obtaining any other licence under this Act. The Authority shall take into consideration whether the grant of an additional licence will promote efficiency and fair competition in its review of the application.                                                                                                                                                                                                                                                                                |
| Order for compliance                    | 28      | Where the Authority is of the opinion that a Licensee is in contravention of a condition of a licence or a requirement under this Act, or regulations, codes or standards made under this Act, it shall direct the Licensee to comply with that condition or requirement.                                                                                                                                                                                                                                                                                                                                                         |
| Modification of licence                 | 29      | <p>The Authority, may modify the terms and conditions of a licence only if the benefits of such modification for public interests significantly exceed the disadvantages of the Licensee.</p> <p>Process adopted shall be similar to that for grant of license, including issue of notice and invitation of objections.</p> <p>The Authority shall take into account all representations and objections before notifying the Licensee and other directly affected parties of his decision.</p> <p>The Licensee shall be compensated for financial losses as a result of modifications as laid down in the licence conditions.</p> |
| Licensee's application for modification | 30      | <p>Where, in the opinion of a Licensee, conditions of his licence have become unduly onerous and are impacting on his ability to fulfil his obligations under the licence, he may apply to the Authority in writing requesting that the licence be modified, with all the details.</p> <p>Process adopted shall be similar to that for grant of license, including issue of notice and invitation of objections.</p> <p>The Authority shall take all representations and objections into account before notifying the Licensee and the affected parties of his decision.</p>                                                      |
| Duration of licence                     | 31      | <p>Licensee duration shall not exceed thirty years.</p> <p>A Licensee may within three years before the expiry of a licence, apply for a renewal of the licence.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Transfer of licence                     | 32      | <p>A licence shall not be transferred without the written consent of the Authority.</p> <p>The Authority shall satisfy itself of the legal, technical and financial competence of the transferee.</p> <p>The Authority shall not unreasonably withhold the consent to any application to transfer unless it has reason to believe that the public interest is likely to be prejudiced by the transfer.</p>                                                                                                                                                                                                                        |
| Performance of activities               | 33      | A Licensee shall carry out the licensed activities in accordance with the licence, this Act and regulations, standards and codes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Context                                      | Section | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Licence conditions and revocation of licence | 34      | <p>The Authority may revoke a licence where he is satisfied that the Licensee is not operating in accordance with the terms and conditions of the licence or provisions of this Act or any regulations, codes or standards made under this Act if the breach;</p> <ul style="list-style-type: none"> <li>i. inflicts significant damage on public or private</li> <li>ii. interest affected by the breach;</li> <li>iii. lasts for a considerable period of time;</li> <li>iv. takes place repeatedly; or</li> <li>v. causes the Authority to have strong reasons to believe that the Licensee may not be able to fulfill his or her obligations under the licence or this Act;</li> </ul> <p>Licence shall be revoked only after providing a notice period of 45 days to show cause on why the licence should not be revoked.</p> |
| Records and reports                          | 35      | <p>A Licensee shall keep records and prepare reports relating to the Licensee's operations.</p> <p>The Authority shall make regulations specifying the requirements for records and reports required</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 3.5.3 Regulatory framework for electricity trading licence

As there is no separate legal provisions for trading activity, the corresponding regulatory framework is also absent. However, there are a few regulations that support the generic licensing framework such as:

- BEA 'Regulatory Fees Regulations 2006' specifies licence application fees and annual licence fee. However, these Regulations do not explicitly specify either the licence application fee or annual licence fee for trading import licensees.
- BEA 'Accounting and Reporting Regulations, 2006' specifies the reporting requirements of licensees, including the report contents and frequency of reporting. However, this Regulation also explicitly covers only generation, transmission and distribution licensees.

### 3.5.4 Operational framework for electricity trading licence

In the absence of legal framework, there are no electricity traders licensed in Bhutan. However, some of the generating and distribution licensees have licences to export / import energy from other countries. A list of such licences granted by BEA is shown below.

**Table 8: List of licensees in Bhutan with export / import licence**

| Company                                         | Project                         | Licence                                                         |
|-------------------------------------------------|---------------------------------|-----------------------------------------------------------------|
| Druk Green Power Corporation Limited            | 64 MW Basochhu Hydropower Plant | Import and export electrical energy from and to other countries |
| Druk Green Power Corporation Limited            | 336 MW Chhukha Hydropower plant | Import and export electrical energy from and to other countries |
| Druk Green Power Corporation Limited            | 1020 MW Tala Hydropower Plant   | Import and export electrical energy from and to other countries |
| Druk Green Power Corporation Limited            | 60 MW Kurichhu Hydropower Plant | Import and export electrical energy from and to other countries |
| Punatsangchhu-I Hydroelectric Project Authority | -                               | Export electrical energy to India                               |
| Dagachhu Hydro Power Corporation Limited        | -                               | Export electrical energy to India                               |
| Bhutan Power Corporation Limited                | -                               | Import electrical energy from other countries                   |

Also, similar to the case of regulatory framework, there are a few operational guidelines available. However, these also mostly cater to only generation, transmission and distribution licensees:

- **BEA Guidelines for fines (Punitive and Correctional)**

These guidelines inform on the levy of fines to the Licensees for violations of provisions of the Act, regulations, standards, codes, licences, licence condition, contracts approved or directives issued by the Bhutan Electricity Authority, and concession agreements entered into between Licensees and the Government. The guidelines also provide for the imposition of sanctions including stopping of activities deemed to be illegal, carrying out of corrective measures, and payment of fines.

- **BEA Guidelines for processing licences**

These guidelines establish the procedures and routines to be applied by Bhutan Electricity Authority (BEA) in processing applications and granting licences to any person or entity intending to carry out activities under the Electricity Act 2001. The guidelines mainly focus on providing project details to possible project affected people, considering environmental consequences etc., which are mostly relevant for generation and transmission projects.

### **3.5.5 Institutional framework for electricity trading licence**

As there is no separate legal framework of electricity trading licence, Bhutan currently also does not have any defined institutional framework for grant of electricity trading licence. However, export/import licences can be obtained from Bhutan Electricity Authority, which also regulates the licensed operations.

## **3.6 Bangladesh**

### **3.6.1 Institutional framework for electricity**

The Ministry of Power, Energy and Mineral Resources (MPEMR), Government of the People's Republic of Bangladesh, is responsible for the overall planning, development, and management of different types of commercial energy resources and the overall power supply value chain.

The Power Division under MPEMR is responsible for formulating power sector policies and supervising, controlling & monitoring the developmental activities in the power sector of the

country. The Power Cell provides assistance to the Power Division in implementing the reform measures being taken by the government, along with performance monitoring of the utilities.

The Bangladesh Power Development Board (BPDB) is responsible for major portion of generation and distribution of electricity, mainly in urban areas, except Dhaka and West Zone of the country. The Board is under the Power Division of MPEMR. The power generation utilities, namely, Ashuganj Power Station Company Ltd. (APSCL), North West Power Generation Company Ltd. (NWPGL) and Electricity Generation Company of Bangladesh Ltd. (EGCB) are established as corporatized commercial entities, unbundled from BPDB.

The IPP cell within BPDB is primarily responsible for contracting, power procurement / bid process management and subsequent monitoring of the Independent Power Producer (IPP) contracts. This cell has three divisions, namely IPP Cells 1, 2 and 3. The IPP cell 1 and 3 oversee contracting with IPPs and the Power Purchase Agreements (PPAs) for cross border power purchase. IPP Cell 2 looks after procurement from Rental Power Plants (RPPs), Quick Rental Power Plants (QRPPs) and other commercial power generating entities, viz. NWPGL, APSCL and EGCB.

The Planning & Development (P&D) division within BPDB is responsible for overall power system planning and procurement for the whole country. The division is also in charge of procurement, planning, covering quantum of power purchase, catering base and peak load demands, grid support, etc.

The generation sector is open for private sector participation and Bangladesh has several IPPs ranging from large Combined Cycle Power Plants (CCPP), Rental Power Plants (RPP), Quick Rental Power Plants (QRPP), and other coal fired IPPs (awarded or under award stage). Bangladesh-India Friendship Power Company (Pvt.) Ltd. (BIFPCL), a Joint-Venture (JV) between NTPC Ltd., India and BPDB, and Coal Power Generation Company Bangladesh Ltd. (CPGCL), established as an enterprise of the Government of Bangladesh, are the two other generation utilities presently under pre-construction stage. The Rural Power Company Limited (RPCL) was the first Independent Power Producer (IPP) of Bangladesh and the first non-BPDB entity to be licensed to take up power generation.

Bangladesh has one transmission utility namely, Power Grid Company of Bangladesh Ltd. (PGCL), which is responsible for transmission network, operation & maintenance, and development of transmission network.

There are five distribution companies (Discoms), namely BPDB, Dhaka Power Distribution Company (DPDC), Dhaka Electricity Supply Company (DESCO), West Zone Power Distribution Company Ltd (WZPDCL) and Rural Electrification Board (REB), which own and operate the country's distribution network and supply electricity to the end users.

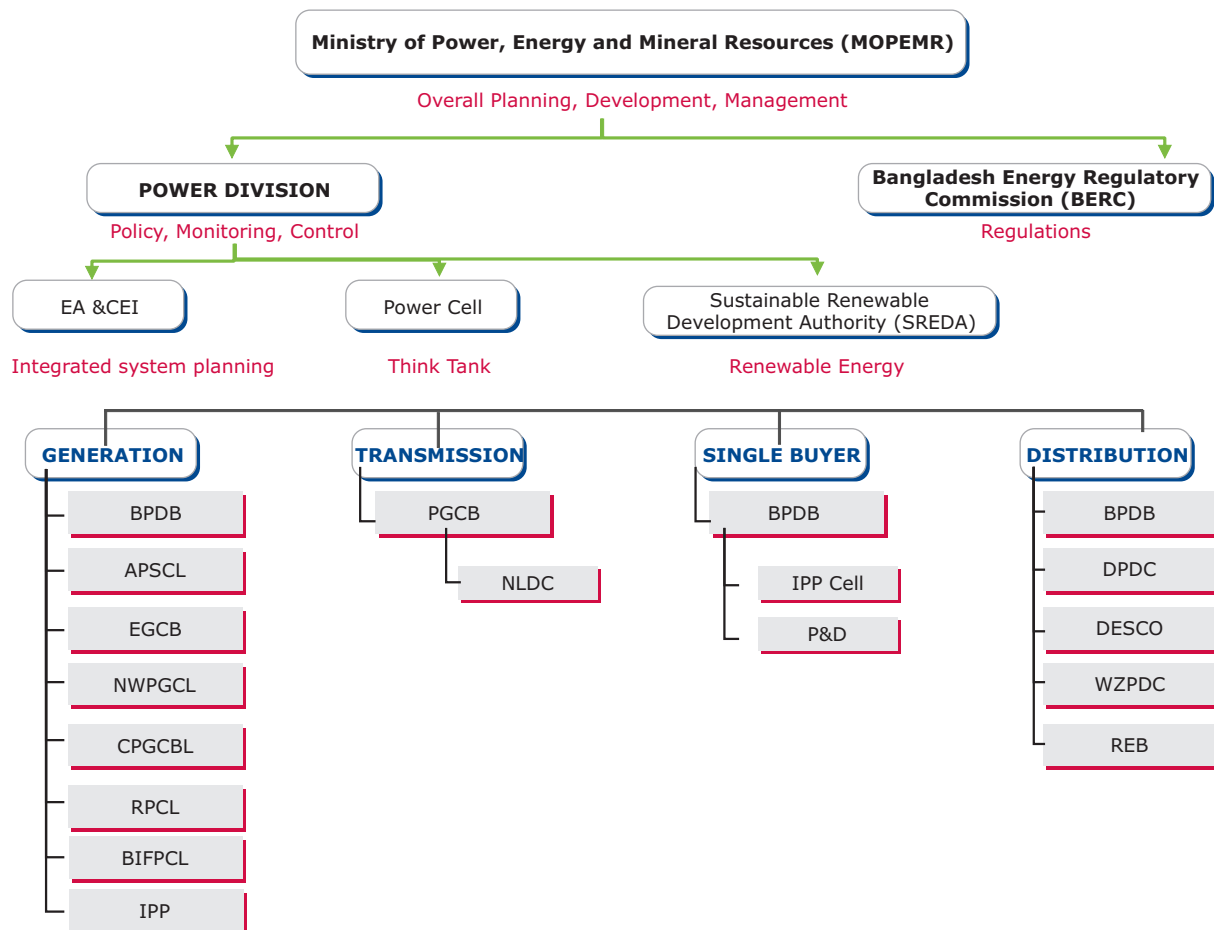
The Bangladesh Energy Regulatory Commission (BERC), formed in 2003 and effective since April 2004, is an independent commission with a mandate to regulate the energy sector (gas, electricity, and petroleum products) in Bangladesh, including fixation of electricity tariffs, pricing of gas & petroleum products, and drafting of regulations, codes & standards.

The Bangladesh power sector operates under a single buyer model. BPDB acts as the single buyer of all the electricity generated in Bangladesh and sells bulk electricity to all the distribution utilities. There is no separate power trading entity.

PGCL is responsible for wheeling of energy from BPDB to the distribution entities. PGCL recovers its energy wheeling charge from distribution entities at the tariff fixed by BERC. The system operator National Load Dispatch Centre (NLDC) dispatches electricity from generating entities following merit order dispatch principle and is part of PGCL.

BERC and Power division of MoPEMR are licensing and nodal authorities for the sector. The following figure illustrates the administrative arrangement of power sector in Bangladesh.

**Figure 12: Bangladesh power sector institutional framework**



### 3.6.2 Legal and policy framework for electricity trading licence

Power sector of Bangladesh is primarily governed by the Electricity Act 1910 and Bangladesh Electricity Regulatory Commission Act 2003. However, these laws do not identify trading as a distinct activity or as a licensed activity.

### 3.6.3 Regulatory framework for electricity trading licence

In the absence of legal framework, regulatory framework is also not available for trading licensees in Bangladesh.

*Note: There is also a BERC Licence Regulations 2006 with amendments. However, English translation of this document was available for review.*

### 3.6.4 Operational framework for electricity trading licence

In the absence of legal and regulatory framework, operational framework is also not available for trading licensees in Bangladesh.

### 3.6.5 Institutional framework for electricity trading licence

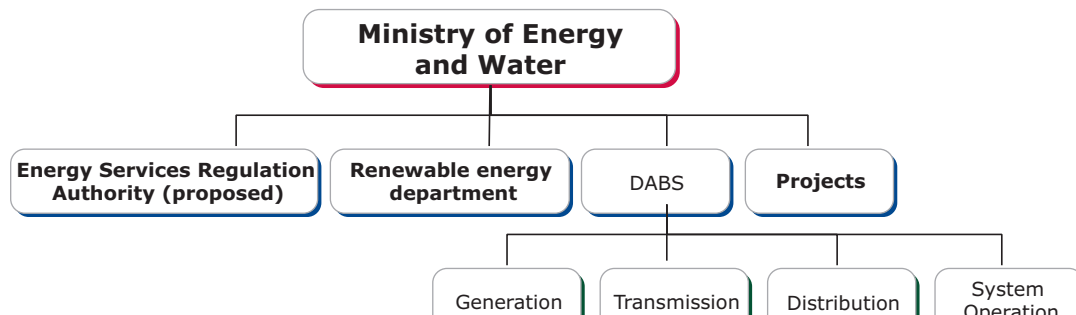
In the absence of legal and regulatory framework, institutional framework is also not available for trading licensees in Bangladesh.

## 3.7 Afghanistan

### 3.7.1 Institutional framework for electricity

The Ministry of Energy and Water (MEW) is the governing body for the electricity sector in the country. At present, the policy and regulatory framework governing the electricity sector in Afghanistan is in nascent stage of development. The generation, transmission and distribution of electricity is carried out by vertically integrated utility DABS. Energy Services Regulation Authority is the proposed system regulator. The following figure illustrates the arrangement of power sector in Afghanistan.

Figure 13: Afghanistan power sector institutional framework



DABS is an independent and autonomous limited liability company and it is owned by Government of Afghanistan. DABS was incorporated in May 2008 and it is responsible for operating and managing electric power generation, import, transmission, and distribution throughout Afghanistan on a commercial basis. Power imported from Tajikistan and Uzbekistan is also managed by DABS.

Afghanistan has CBET with nearby countries such as Iran, Tajikistan, Turkmenistan and Uzbekistan under bilateral arrangements. It also plans to trade power with Kyrgyzstan and Pakistan under CASA-1000 project. Master agreement on transmission system in CASA-1000 project provides for open access and imbalance settlement which are critical ingredients required for non-discriminatory open access in CBET projects.

### 3.7.2 Legal and policy framework for electricity trading licence

Power Services Regulation Act, 2016 governs is the fundamental legislation governing electricity industry in Afghanistan. Under article 10 and 11 of the law, five kinds of licences for the energy services are proposed, which are as follows:

- Electricity generation license for maximum of 25 years
- Electricity transmission license for maximum of 25 years
- Electricity distribution license for maximum of 20 years
- Electrical energy import license for maximum of 15 years
- Electrical energy export license for maximum of 15 years

Therefore, the regulatory environment in Afghanistan does not envisage trading as a separate activity that may be conducted inside the country, but allows for cross border export / import.

As per Article 7 of the Act, the Energy Services Regulation Authority is responsible for most regulatory aspects of licensing and licensees. It undertakes to:

- register, issue, extend, suspend, and revoke licenses
- address the complaints of consumers and licence holders and to resolve disputes
- ssue orders to prevent violations of the terms of licences

- monitor the activities of the licence holders in order to comply with international conventions of power sector to which Afghanistan has acceded
- regulate and monitor the activities of licence holders
- provide healthy competition environment for the licence holders
- identify the contingent violations of the provisions of this law and the terms of the licences
- oblige the licence holders to compensate damages arising from violation of the terms of licences.

The generic licensing provisions (which are also applicable to export / import licensees), as per the Act, other than those discussed earlier, are listed below:

**Table 9: Provisions related to licensing in Power Services Regulation Act 2016**

| Context                              | Section             | Description                                                                                                                                                                                                                 |
|--------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition of licence / permit       | Article 3, Clause 4 | A written permit which shall be issued to the applicant in accordance with the provisions of this law for production, import, export, transmission and distribution of the electricity energy and other related activities. |
| Qualifications of permit applicants  | Article 9           | Lists out the qualification and disqualification criteria for obtaining licence.                                                                                                                                            |
| Licence application procedure        | Article 12          | Describes the application procedure for obtaining licence / permit, which includes competitive processes conducted by the Regulator and the manner of issue of public notice.                                               |
| Obligations of licence holder        | Article 13          | Lists out the obligations of licensees, such as payment of licensee fee, maintenance of records, reporting requirements, and maintaining compliance with the legal framework.                                               |
| Renewal of licence                   | Article 15          | Provides for application to renew the license period, prior to 60 days from the grant of licence.                                                                                                                           |
| Suspension and revocation of licence | Article 16, 17      | Provides for suspension and revocation of licences under certain circumstances.                                                                                                                                             |

However, these provisions, which may allow for bilateral CBET, are inadequate to allow a proper trading regime, with separate trading licensees to be developed.

### 3.7.3 Regulatory framework for electricity trading licence

No specific regulations related to electricity trading have yet been formed.

### 3.7.4 Operational framework for electricity trading licence

Afghanistan does not have any specific guidelines, process and procedure for trading licensees.

### 3.7.5 Institutional framework for electricity trading licence

In the absence of legal and regulatory framework for trading licensees, institutional framework is also not available for trading licensees in Afghanistan.

## 3.8 Pakistan

### 3.8.1 Institutional framework for electricity

Ministry of Water and Power (MWP) is the concerned ministry for power and water and operates as per the mandate provided by Rules of Business, 1973. Relevant business falling under MWP are:

- Matter relating to development of water and power resources
- WAPDA
- Matters relating to electric utilities
- Electricity

Pakistan's power market (except IPPs) mainly comprises of government-owned companies. There are following prime entities in its power sector:

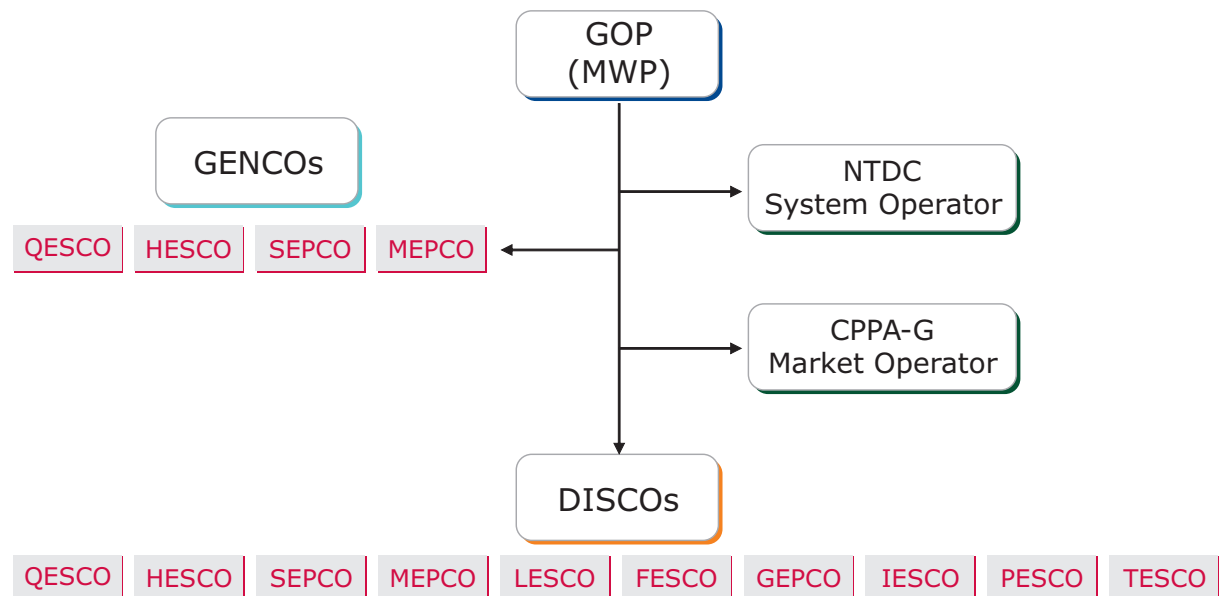
- Four government-owned generation companies (GENCOs).
- Ten government-owned distribution companies.
- One National Transmission and Dispatch (Grid) Company (NTDC), which until recently comprised:
  - Central Power Purchasing Agency
  - System Operator
  - Transmission Network Operator
  - Contract Registrar and Power Exchange Administrator
  - One Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)

CPPA-G is recently authorized to conduct the market operations under the NEPRA (Market Operator Registration, Standards and Procedure) Rules, 2015 (Market Rules). Following departments of NTDC are handed over to CPPA-G:

- Central Power Purchasing Agency
- Contract Registrar and Power Exchange Administrator

NEPRA is responsible to function as an independent regulator of power sector operations, including financial and technical compliance. NEPRA was established in 1997 as per the NEPRA Act. DISCOs are incorporated entities and governed by the Companies Ordinance.

**Figure 14: Pakistan power sector institutional framework**



### 3.8.2 Legal and policy framework for electricity trading licence

Pakistan's National Power Policy 2013 states that regional transmission networks may be encouraged to promote regional trade. However, there is no direct reference to trading licensees in the policy.

The fundamental legislation for the electricity industry in Pakistan is the 'Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997'. However, this Act mentions only generation, transmission and distribution as licensed activities and makes no reference to trading either as a separate activity or as a licensed activity. The Act also does not specify any separate licensee category for export or import of electricity.

### 3.8.3 Regulatory framework for electricity trading licence

No specific regulations related to electricity trading have yet been formed.

### 3.8.4 Operational framework for electricity trading licence

Pakistan does not have any specific guidelines, process and procedure for trading licensees.

### 3.8.5 Institutional framework for electricity trading licence

In the absence of legal and regulatory framework for trading licensees, institutional framework is also not available for trading licensees in Pakistan.

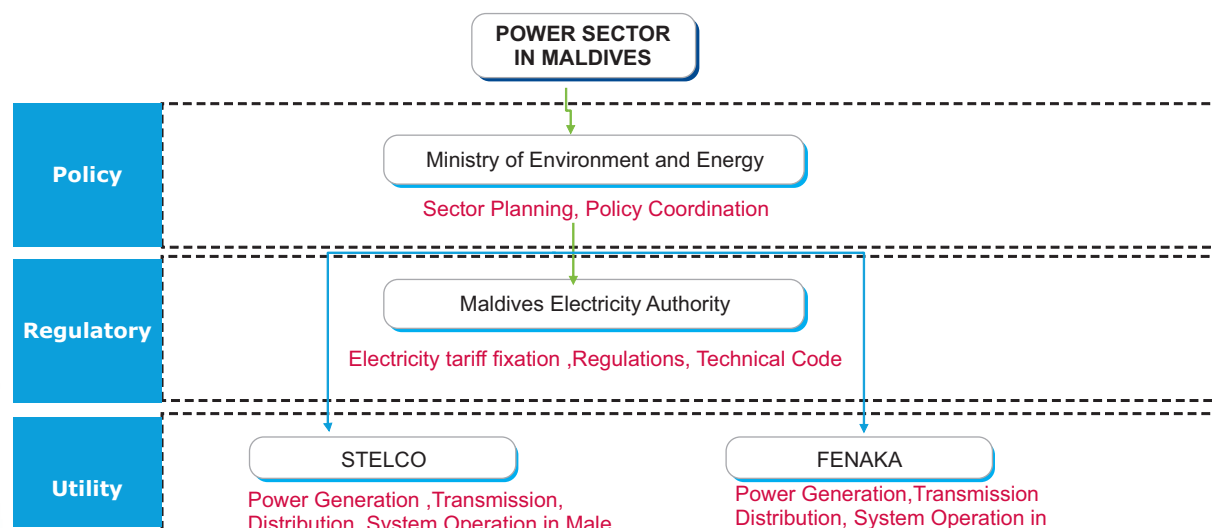
## 3.9 Maldives

### 3.9.1 Institutional framework for electricity

Maldives is composed of geographically separate islands. Currently, all islands have their own power systems. Each island is effectively a mini-grid with a diesel based generation system while very few islands have the PV systems feeding electricity directly into the grid. No interconnection between the islands exist as of today and the electricity service is provided by utilities or managed by themselves in the islands.

The institutional framework for Maldives power sector is shown below:

**Figure 15: Institutional framework for electricity in Maldives**



The inhabited islands in the Male' (capital) region provided by State Electric Company Ltd. (STELCO). The outer Islands provided by FENAKA Corporation (majority) and Island Community/Council. The resorts have their own electricity supply and distribution.

Maldives Energy Authority (MEA) is an independent regulatory body affiliated to the Ministry of Energy and Environment and operates under guidance of a Governing Board appointed by the President.

### 3.9.2 Legal and policy framework for electricity trading licence

The Electricity (Applications for Licenses and Exemptions) Regulation, 2012 specifies the application process for obtaining licenses for generation, transmission, distribution and supply of electrical energy, with no reference to trading.

#### **Application and Severability;**

2. *An Application for the issue of—*

*(1) These regulations shall apply to any person carrying out or intending to carry out the generation, transmission, distribution and supply of electrical energy in Maldives.*

However, export and import is mentioned as part of the definition of licence:

*“licence” means a document or instrument authorizing any person to import, export, generate, transmit, distribute and/or supply electrical energy, in the manner described in such document or instrument;*

*“licensee” means a person authorized by a licence or permit to import, export, generate, transmit, distribute and/or supply electrical energy;*

English translation of some of the other key legislations such as Law 4/96 (Provision of Utility Services), 2012 and Electricity Regulation of Maldives, 2012 were not available for review.

### 3.9.3 Regulatory framework for electricity trading licence

No specific regulations related to electricity trading have yet been formed.

### 3.9.4 Operational framework for electricity trading licence

Maldives does not have any specific guidelines, process and procedure for trading licensees.

### 3.9.5 Institutional framework for electricity trading licence

In the absence of legal and regulatory framework for trading licensees, institutional framework is also not available for trading licensees in Maldives.

## 3.10 Sri Lanka

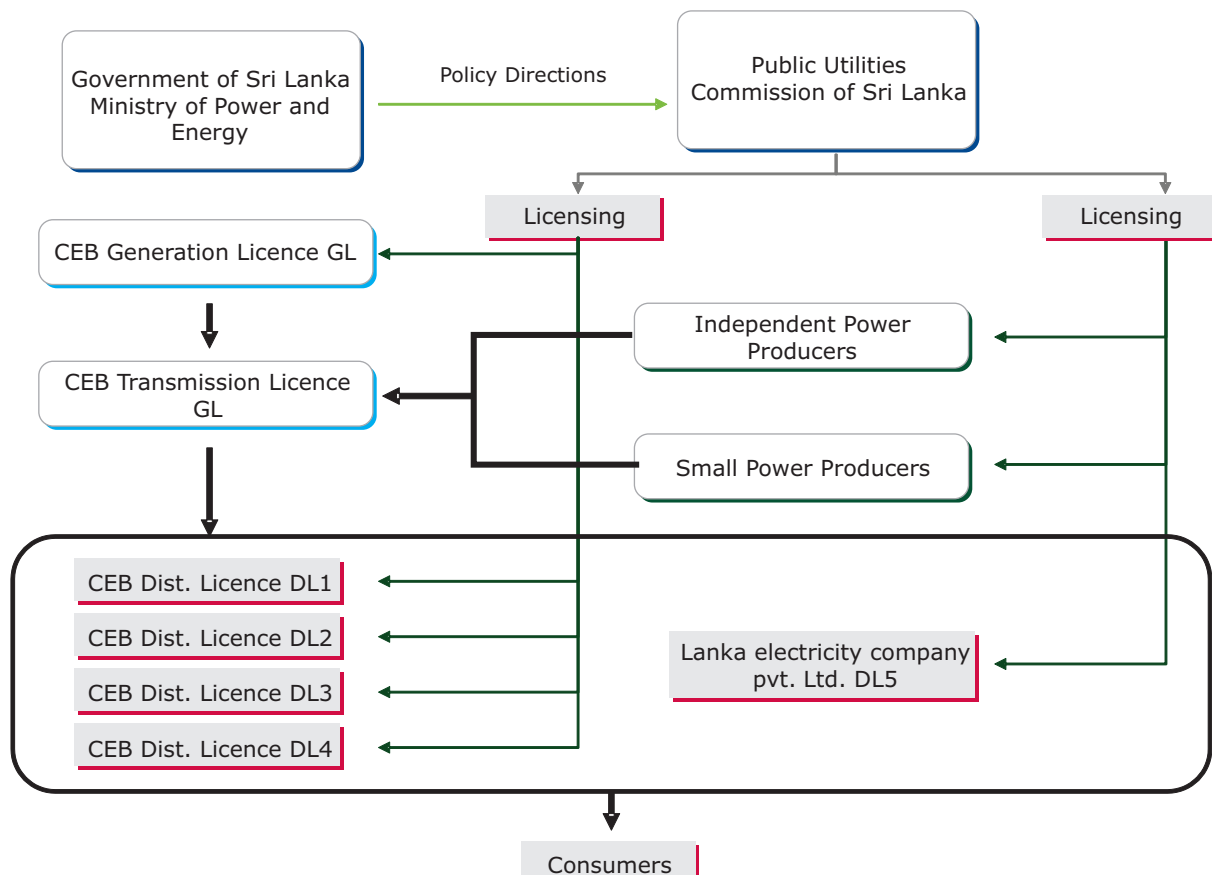
### 3.10.1 Institutional framework for electricity

Sri Lanka's power sector is driven by Government owned Ceylon Electricity Board (CEB) which manages generation, transmission and distribution. The private sector involvement in generation since 1996 is not generally considered to be a success story. While IPP's have been able to fill in the demand supply gap, the average generation cost is higher than the CEB plants.

The Sri Lanka Electricity Act No. 20 of 2009 does not envisage privatization of state entities, so that the CEB's functional business units are likely to continue as such. However, the LECO, a state-owned company established in 1984 to distribute electricity in areas previously served by local authorities (municipal councils, etc.), continues to function as a successful commercially-run company, with good technical performance.

The following is the power sector landscape in Sri Lanka:

**Figure 16: Institutional framework for electricity in Sri Lanka**



The power sector in Sri Lanka is composed of a mix of large, small, public and private entities. The Ministry of Power and Energy (MoPE) oversees the publicly owned CEB, which is involved in power generation, transmission, distribution and revenue collection. MOPE is responsible for formulation of energy policy, project implementation and monitoring, supervision of state-owned electricity utilities. The Ministry of Petroleum and Petroleum Resource Development (MOPPRD) looks after petroleum industry project implementation and monitoring, supervision of state-owned petroleum corporation, petroleum resource development and exploration; supply of fuel for the thermal power projects.

Public Utilities Commission of Sri Lanka (PUCSL) is the Infrastructure regulatory commission presently empowered to regulate electricity industry and bunker and lubricating oil industries.

### 3.10.2 Legal and policy framework for electricity trading licence

The Electricity Act 2009, which is the fundamental legislation for the sector, mentions licensing for only generation, transmission, distribution and supply of electricity, with no reference to trading, export or import.

#### “CHAPTER III

#### PART I

#### LICENSING

7. (1) A person shall not -

(a) generate electricity;

(b) transmit electricity; or

(c) distribute and supply or distribute or supply electricity for the purpose of giving a supply to any premises or enabling a supply to be given to any premises, unless he is authorized to do

so by a licence granted under this Act or is exempted from obtaining a licence under section 10.”

Trading finds a limited mention in the Act with respect to trading between licensees.

*“56. (1) Regulations may be made for the purpose of-*

*(a) allowing and securing appropriate electricity trading arrangements between licensees;”*

Neither the National Energy Policy 2008 nor the General Policy Guidelines 2009 specifies trading as a separate activity.

### **3.10.3 Regulatory framework for electricity trading licence**

The Electricity (Applications for Licences and Exemptions) Regulation, 2009 deals with procedure related to submission of application for a license to generate, transmit or distribute electricity. However, as the Electricity Act does not cover trading, this Regulation is also not applicable for trading.

### **3.10.4 Operational framework for electricity trading licence**

Sri Lanka does not have any specific guidelines, process and procedure for trading licensees.

### **3.10.5 Institutional framework for electricity trading licence**

In the absence of legal and regulatory framework for trading licensees, institutional framework is also not available for trading licensees in Sri Lanka.

## 4 International best practices for trading licence regime

### 4.1 Introduction

The presence of trading licensees in a power market is viewed as a catalyst in the development of multilateral cross border trade, as such licensees are expected to have access to a wide portfolio of buyers and suppliers. It may also be noted that such trading licensees can participate in cross border electricity trade (CBET) through over the counter (OTC) contracts, without the aid of international power exchanges, the setting up which may require a considerable time.

Electricity industry in South Asia (SA) is heavily regulated, and therefore trading activity also requires a proper licensing regime in line with that for other activities such as transmission and distribution. In this context, the SA countries (other than India) can draw lessons from other countries in institutionalizing trading license regimes.

While India offers the best reference, considering its matured trading market and similarity in industry structure with those of other SA countries, lessons can also be drawn from participants of international power pools such as West African Power Pool (WAPP), South African Power Pool (SAPP) and the Central American Electrical Interconnection System (SIEPAC). A study of the trading licence regimes in the respective domestic power sectors and the manner of their integration into cross border trade arrangements can offer learning to all the SA countries.

A summary of the countries and power pools which have been considered in the study are provided below:

#### India

India has the most developed and mature electricity trading license regime in the South Asian region. Trading licensees have played a key role in Indian power sector since 2001. Currently, trading licensees undertake trading transactions both within the country and with neighboring countries. Trading licensees in India have played a key role in generation capacity addition, cross border trading and power market development.

#### South Africa

South Africa has a well-defined legal framework for trading licence regimes, which also covers import and export of electricity. However, executive actions have so far restricted the evolution of a fully developed trading licence regime, as Eskom is designated as the sole single buyer for all IPPs. Meanwhile, in renewable energy segment, where trading licensees are allowed to operate, trading licensees are playing an enabling role in development of generation capacity and in demand aggregation.

#### South African Power Pool (SAPP)

The South African Power Pool was established in 1995, comprising 12 Southern African Development Community (SADC) member countries (Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe) of which nine are operating members whose interconnected grid carries about 97% of the power produced by SAPP countries. SAPP is the most advanced power pool in Africa.

Though SAPP had made some enabling provisions for direct participation of trading licensees, trading in SAPP still seems to be restricted between the Government owned utilities, single buyers and IPPs.

### West African Power Pool (WAPP)

The West African Power Pool (WAPP) covers 14 of the 15 countries (Benin, Côte d'Ivoire, Burkina Faso, Ghana, Gambia, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo) of the Economic Community of West African States (ECOWAS).

WAPP was established to ensure Regional Power System integration and realization of a Regional Electricity Market. WAPP brings together 27 member companies operating in Public and Private Generation, Transmission and Distribution segments in West. However, regional market implementation in WAPP is still in initial stage, with limited role, if any, for trading licensees.

### Central American Electrical Interconnection System (SIEPAC)

SIEPAC stands for Sistema de Interconexión Eléctrica para los Países de América Central, commonly translated in English as the Central American Electrical Interconnection System. The interconnection, commissioned in 2013, covers Panama, Costa Rica, Honduras, Nicaragua, El Salvador, and Guatemala. The participants in the interconnected system have trading licensees.

### Interconnection of United States of America with Mexico and Canada

United States of America has a much evolved power market in terms of trading, with trading being conducted both on physical and financial terms. A substantial number of power traders in USA engage in cross border transactions with neighboring countries such as Mexico and Canada.

Though there is no formal trading licence regime, wholesale power marketers indulging in inter-state commerce come under the jurisdiction of the Federal Energy Regulatory Commission (FERC), whose authorization for "Market based rate" is required for undertaking wholesale power sale / resale. The power marketers further require authorization from the Department of Energy in case of electricity export to other countries.

It may be noted that in many of the above countries / power pools, only some components of the trading licence regime are available. Therefore, only those aspects which offer some learning have been adopted while compiling this report.

Figure 17: Progress of trading licence regimes and available learnings

| Countries / Power Pools  | Progress of trading licence regime |                        | Aspects available for review |                  |          |                       |            |
|--------------------------|------------------------------------|------------------------|------------------------------|------------------|----------|-----------------------|------------|
|                          | Legislative framework              | Operational experience | Key drivers                  | Enabling factors | Barriers | Role of power traders | Challenges |
| India                    | ★                                  | ★                      | ✓                            | ✓                | ✓        | ✓                     | ✓          |
| South Africa             | ★                                  | ★                      | ✓                            | ✓                | ✓        | ✓                     |            |
| South African Power Pool | ★                                  | ☆                      | ✓                            | ✓                | ✓        |                       |            |
| West African Power Pool  | ☆                                  | ☆                      |                              | ✓                |          |                       |            |

| Countries / Power Pools                            | Progress of trading licence regime |                        | Aspects available for review |                  |          |                       |            |
|----------------------------------------------------|------------------------------------|------------------------|------------------------------|------------------|----------|-----------------------|------------|
|                                                    | Legislative framework              | Operational experience | Key drivers                  | Enabling factors | Barriers | Role of power traders | Challenges |
| Interconnection of USA with Mexico and Canada      | ★                                  | ★                      | ✓                            | ✓                | ✓        | ✓                     | ✓          |
| Central American Electrical Interconnection System | ★                                  | ★                      | ✓                            | ✓                | ✓        | ✓                     | ✓          |
| ★ High ★ Medium ☆ Low                              |                                    |                        |                              |                  |          |                       |            |

In the following sub-sections, review and analysis of the international best practices (with particular focus on Indian experience) on trading in the context of domestic power sector as well as from the perspective of CBET are presented.

The following framework is adopted for review of the best practices in each country.

**Table 10: Framework for review of international best practices**

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Institutionalizing trading licence regimes: Salient features and key drivers</b> | Trading licence regimes are often driven by the establishment of legal and regulatory framework, which in turn have been driven by the requirements of the power market and corresponding policy initiatives. The key drivers and salient features of trading licence regimes have been presented in this section.                                                                            |
| <b>Institutionalizing trading licence regimes: Enabling factors</b>                 | A trading licence regime cannot function merely with the existence of legal and regulatory framework. It needs a few enabling factors such as the presence of market conditions and an industry structure that enables the trading licensees to effectively participate in the power market. The role of such enabling factors is discussed in this section.                                  |
| <b>Institutionalizing trading licence regimes: Barriers</b>                         | Barriers such as presence of mandatory single buyer regimes, restrictive definitions of trading licensees in legislative framework, absence of detailed guidelines for licensing and absence of regulatory harmony in regional level needs to be identified and overcome to institutionalize trading licence regimes that are capable of supporting cross border trade                        |
| <b>Role of power traders</b>                                                        | Power traders take up the roles of supply aggregation, demand aggregation, risk mitigation intermediary etc. while making a considerable impact in the development of competitive markets. The role played by power traders in various markets is explored in this section.                                                                                                                   |
| <b>Risks and challenges in design and implementation of trading licence regimes</b> | Development of trading licence regime is a continuously evolving process, with the associated regulatory and operational frameworks getting modified regularly to cater to the changes in market and to mitigate various risks. The challenges, risks and mitigation measures taken by other countries and regions can offer key learnings in institutionalization of trading licence regime. |

Key lessons from the review of international experience are used to derive recommendations for institutionalization of trading licence regime in South Asia.

## 4.2 India

### 4.2.1 Salient features and key drivers in institutionalizing trading licence regimes

The evolution of trading licence regimes cannot be viewed as a sequential process driven by a set of drivers, as there are overlaps and inter-linkages. However, in overview, ignoring minor deviations, it is seen that the trading licence regimes are often driven by the establishment of legal and regulatory framework, which in turn have been driven by the requirements of the power market and corresponding policy initiatives. The best example for this is the case of India.

In India, the establishment of a proper electricity trading licence regime can be linked to the promulgation of Electricity Act, 2003 (The Act) on 10 June 2003. The Act provided a definition to trading, and introduced trading as a licensed activity to be undertaken only by licensed entities. The Act also laid down key aspects of trading licence regime, including the procedure for grant of trading licence and identification of regulatory institutions for trading licensees. Based on the Act, Regulations were notified by the Central Electricity Regulatory Commission at inter-state level, and by respective State Electricity Regulatory Commissions at intra state level to operationalize the trading licence regime.

However, the establishment of legal and regulatory framework for electricity trading in India was not the first step in the establishment of trading licence regime in India. Instead, the framework was established to support the vision of the Government to introduce traders as legitimate participants in the power market. India's first power trading company, Power Trading Corporation was set up by the Government of India in 1999, mainly with the aim of introducing an intermediary in the market which will purchase power from mega projects (capacity of 1000 MW or more) and resell it to multiple states, while providing payment security to the sellers. This was expected to aid in the implementation of mega power projects in the country, as there was substantial power shortages, while large scale investments from the public sector was limited in the macro-economic scenario of those times.

Thus the need for a risk mitigation intermediary to encourage private participation in generation was a key driver in the setting up of trading regime in India. In line with the new policy, the Government of India established the Power Trading Corporation of India (PTC) in April 1999. The company introduced weekly billing and payment system, and a basic payment security mechanism, which provided comfort to the generation companies.

Therefore, it was the market requirement and Government's vision to meet them that acted as the key driver for institutionalization of trading licence regime in India.

### 4.2.2 Enabling factors in institutionalizing trading licence regimes

With reference to the Indian experience, the following factors had played a key role in the institutionalization of trading licence regime:

1. In 1999, when the first trading company was set up, the country had already moved away from the traditional vertically integrated market model. There were already substantial number of Independent Power Producers (IPP) in India such as the National Thermal Power Corporation (NTPC), National Hydro Power Corporation (NHPC) and Dabhol Power Project. The State Electricity Boards (SEB) were already purchasing power from IPPs, apart from their internal generation. Therefore trading licensees could easily become integrated in the market as an additional supplier of power.

2. Electricity Act 2003 introduced the concepts of open access and wholesale competition. This provided an enabling environment for the trading licensees to engage in purchase of power from single or multiple generation projects, and in resale of power to both electricity utilities and bulk consumers.

#### 4.2.3 Barriers in institutionalizing trading licence regimes

With regard the domestic power market of India, there were no substantial barriers in the institutionalization of trading licence regime. The market structure was already conducive to the introduction of trading licensees, and institutions such as Electricity Regulatory Commissions were already set up.

One barrier, which could have posed a problem was the unfamiliarity of the market participants about the concept of trading licensees. Even this possibility was pre-empted by the setting up of PTC, as a Government promoted entity, in 1999. Shareholding of the Government owned Public Sector Units (PSU) and presence of Government nominees in the board of directors of PTC provided it with better acceptability, especially among the government owned electricity utilities. (It may be noted that the ownership of Central Government PSUs in PTC, which initially stood at 60% was gradually diluted to 32% in 2003, and to 16% in 2016.) By the time a proper trading licence regime was institutionalized, the Government had already succeeded in getting trading licensees accepted as key market participants.

In the case of trading licence regime for CBET in India, the following barriers will need to be overcome:

1. Unlike electricity laws of some other countries, India's Electricity Act, 2003, does not deal with export and import activities, either as part of trading, or separately. All the inter-state trading licences are issued by CERC with the statement that the trading licence is granted *"to trade in electricity as an electricity trader in the whole of India"*. (However, definition of inter-State trading in CERC's trading licence regulations was amended in 2012 to include electricity imported from any other country for resale within India or exported to any other country).
2. The Ministry of Power, Government of India, has come up with the "Guidelines on Cross Border Trade of Electricity" on 05 December 2016. These guidelines define the participating entities who can participate in CBET after a one time approval from the designated authority. In case of import of electricity to India, from trading licensees of neighboring countries, the guidelines require Indian entities to have more than 51% ownership in the trading licensee. Trading licensees are also not listed among the entities allowed to export electricity from India.

Though the guidelines allow CBET in spite of these restrictions, after obtaining the approval of designated authority on a case to case basis, such requirement of case-to-case approval may prove to be a hindrance in the participation of trading licensees in CBET in SA.

#### 4.2.4 Role of power traders

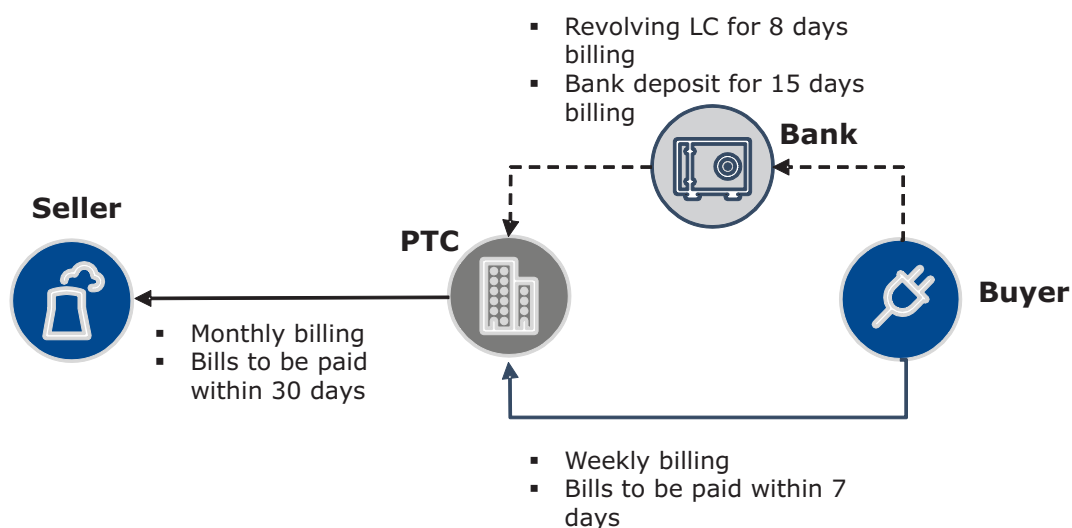
In the Indian context, the trading licensees can be seen to have played a role in the following aspects of power sector:

##### 1. Risk mitigation

In the initial period of introduction of trading licence regime, sale of energy through trading licensees provided more comfort in terms of credit risk and payment delays, as trading licensees provided services such as weekly billing and payment, payment security mechanisms, and option of sale to other buyers in case of continued payment default.

For example, the arrangements followed by PTC in 2001 are shown below, wherein PTC had a weekly payment system along with payment security agreed with the buyers, and a monthly payment system with the sellers. As PTC received payments from buyers on a weekly basis, with option for diverting the power, encashment of (Letter of Credit) LC and deposit etc., it could make the payments to the sellers on time.

**Figure 18: Illustration of payment risk mitigation by traders**



## 2. Removal of information asymmetry and enabling optimum utilization of generation capacity

Traders have better access to information on surplus sellers and deficit buyers. It may be noted that while power exchanges were set up in India only in 2008, traders were active in the sector since 2002.

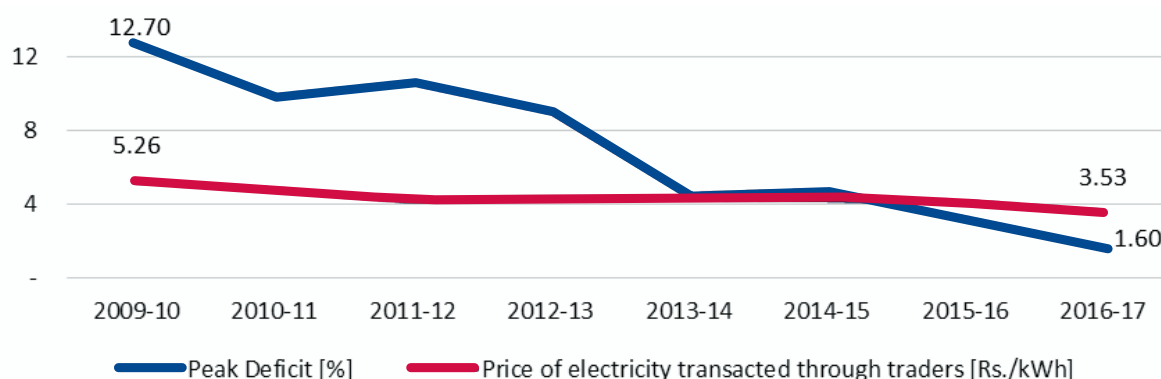
Trading licensees also entered into agreements with generating companies for marketing of the entire power generated, especially in the case of projects with no prior long term PPAs. There were many cases wherein the trading licensees entered into agreements with generators assuring takeoff of untied capacity in short, medium and long term arrangements, with provision for penalty in case of failure to tie up buyers. Such agreements enabled optimum utilization of generation capacity. Such agreements typically have components such as:

1. Compensation in case of failure to tie up the entire available capacity with sellers under long term PPA
2. Assurance on minimum tariff that may accrue to the generator
3. Incentives for sale above the minimum tariff etc.

## 3. Enablement of market discovery of price

Traders enabled market discovery of price, especially during 2002 to 2008, when there were no power exchanges in the country. The prices, though high during the deficit seasons, and especially in southern region where deficit was coupled with transmission constraints, were a more realistic reflection of the price of power in market, and enabled additional generation capacity to be set up. The review of historical trend will show that the tariffs under trading have reduced, in comparison to the improvements in deficit scenario, thereby following the laws of economics.

**Figure 19: Trading prices and demand supply mismatches**



Source: CERC's annual report on short term power, 2016-17

Some plants were even set up envisaging 100% sale of power under merchant power plant mode, for example Lanco Kondapalli Power's 366 MW, Phase II project in Andhra Pradesh.

#### 4. Intermediary for cross border electricity trade

In India, traders have been playing a key role in CBET since the commencement of trading license regime. In the early 1990s, PGCIL was handling even the commercial aspects of cross border electricity trade with Bhutan. In July 1999, Govt. of India directed the Power Trading Corporation (PTC) to take over the activities relating to trading of power with Bhutan. Govt. of India also appointed NVVNL - another Govt. owned trading licensee, as the nodal agency for electricity trade with Bangladesh.

#### 5. Single window service for market participants

The procedure to obtain open access and scheduling of transactions can be quite difficult for individual generators and buyers to handle, in case they are undertaking transactions directly. However, traders undertook most of the procedural formalities in obtaining open access permission and scheduling, including liaising with multiple agencies at Central and State level, thereby providing a single window service for the buyers and sellers in the market. In some cases, the trading licensees even participated in medium and longterm power purchase bids on behalf of the generating licensees. Some of such examples are listed below.

**Table 11: Examples of traders participating in biddings on behalf of generators**

| Buyer                                                     | Purchase                                   | Trading Licensee           | Generator                         | Quoted Capacity [MW] |
|-----------------------------------------------------------|--------------------------------------------|----------------------------|-----------------------------------|----------------------|
| Tamil Nadu Generation and Distribution Company (TANGEDCO) | 1030 MW of RTC power for 7 months, 2015    | GMR Energy Trading Limited | GMR Chhattisgarh Energy Limited   | 150                  |
| Tamil Nadu Generation and Distribution Company (TANGEDCO) | 1030 MW of RTC power for 7 months, 2015    | PTC India Limited          | Dhariwal, Maharastra              | 150                  |
| Rajasthan Rajya Vidyut Prasaran Nigam (RVPN)              | 1000 MW base load power for 25 years, 2012 | PTC India Limited          | Maruti Clean Coal & Power Limited | 250                  |
| Rajasthan Rajya Vidyut Prasaran Nigam (RVPN)              | 1000 MW base load power for 25 years, 2012 | PTC India Limited          | DB Power Limited                  | 250                  |

It may also be noted that trading licensees remain the key player in contracts with duration of more than a month, as such products are not available in India's power exchanges.

The impact of trading licensees on the development of power market was mainly felt in the following areas.

### **1. Encouraging private investment**

Trading licensees started operating in Indian power sector at a time when private investments, especially in large scale power generation projects were not forthcoming due to concerns on low tariffs and credit risks. With time differentiated tariffs, and negotiated tariff mechanisms, trading licensees were able to offer more attractive rates to the sellers than regulated tariff, while ensuring that buyers were also getting power at a reasonable rate. Trading licensees thus played a key role in encouraging private investments in power generation.

### **2. Aiding in whole sale competition**

Trading licensees, by acting as aggregators and single window service providers, acted as catalysts in enabling whole sale competition by offering power not just to electricity utilities, but also to bulk consumers through open access. Trading licensees also enabled captive power plants to enter into agreements for trade of their surplus power. Thus trading licensees played a key role in the promotion of whole sale competition in Indian power sector.

## **4.2.5 Risks and challenges in design and implementation of trading licence regimes**

The design and implementation of trading licensee regime was not without its set of challenges. However, the key decision makers were able to take corrective action to overcome these challenges in most cases.

Some of the challenges in design and implementation of trading licence regimes in India are discussed below.

### **1. Maintaining the right mix of qualification criteria and barriers to entry**

The trading licence regime need to strive to keep out non-serious participants, while at the same time prescribing qualification criteria that may become a major barrier of entry.

In 2010, there were only three category of trading licensees, the lowest category being Category III, under which licensees could undertake annual trade of up to 100 MU, while maintaining a net worth of Rs. 5 crore. For the next higher category, the net-worth requirement was Rs. 25 crore. It was observed by CERC that the entry limit of Rs. 5 crore net-worth for a trading volume of 100 MU was acting as a barrier of entry, and even some of the existing Category III licensees had surrendered their licences due to failure to maintain such net-worth. It also noted that net-worth requirements of Category II licensees are also higher, prompting some licensees to request downgrade of their category. This led CERC to amend its trading license regulations in May 2010, introducing a new Category IV licence and a relaxed volume and net worth requirements for all categories except Category I.

**Table 12: Changes in trading licensee categorization**

| Trading License Category | Before 2010                          |                                | After 2010                           |                                |
|--------------------------|--------------------------------------|--------------------------------|--------------------------------------|--------------------------------|
|                          | Allowable annual trading volume [MU] | Minimum net worth [Rs. crores] | Allowable annual trading volume [MU] | Minimum net worth [Rs. crores] |
| Category I               | No limit                             | 50                             | No limit                             | 50                             |
| Category II              | Up to 500 MU                         | 25                             | Up to 1500 MU                        | 15                             |
| Category III             | Up to 100 MU                         | 5                              | Up to 500 MU                         | 5                              |
| Category IV              | -                                    | -                              | Up to 100 MU                         | 1                              |

Later, to address the concern that the relaxed qualification requirements might result in non-serious participants applying for licence, another amendment was introduced in October 2012. As per this amendment, only those applicants whose constitutional / organizational documents authorize them to participate in the business of electricity trading shall be considered for grant of trading licence.

*“Provided that the applicant should have been authorized to undertake trading in electricity in accordance with its constitutional/organizational documents such as the Main Objects in the Memorandum of Association (in case of a company incorporated under the Companies Act, 1956) or the Partnership Deed (in case of a partnership firm registered under the Indian Partnership Act, 1932) or the constitutional documents of Limited Liability Partnerships under Limited Liability Partnership Act, 2008”.*

## 2. Keeping prices in check

The regulatory authorities have a responsibility to ensure that trading licensees are not using their market power to influence market rates above realistic levels and that the margins charges by the trading licensees are reasonable.

In August 2009, short term power prices in India saw an increase by 2 to 3 times due to a combination of drought and other factors. Consequently, CERC intervened in the market to introduce a temporary price cap, for a period of 45 days, in its order on suo motu petition 178/2009 dated 11 September 2009<sup>1</sup>.

*“Therefore, to ensure reasonable prices of electricity in the period of present shortages, we direct that, with immediate effect, for inter-state day ahead transactions, the minimum tariff or bidding price, as the case may be, shall be Rs. 0.10/ Kwh and the maximum ceiling of tariff or bidding price, as the case may be, shall be capped at Rs. 8/ Kwh. This shall be applicable for both power exchanges and bilateral markets. The minimum and maximum ceiling of tariff as aforesaid shall apply for a period of 45 days from the date of this order.”*

Similarly, on January 2006, CERC notified the CERC (Fixation of Trading Margin) Regulations, 2005, which prescribed that the licensee shall not charge trading margin exceeding four paise/ kWh on the electricity traded, including all charges, except the charges for scheduled energy, open access and transmission losses.

## 3. Managing multiple jurisdictions

In India, trading may be conducted at inter-state level (between entities in different state geographies) or at intra-state level. While inter-state trade comes under the jurisdiction of CERC, intra-state trade comes under the jurisdiction of the respective State Electricity Regulatory

<sup>1</sup> CERC (11 September 2009), Ceiling of tariff for sale and purchase of electricity through bi-lateral agreements and on power exchanges - [http://www.cercind.gov.in/2009/September09/Signed-order-in-Petition-No.-178-2009\\_Suo-motu\\_.pdf](http://www.cercind.gov.in/2009/September09/Signed-order-in-Petition-No.-178-2009_Suo-motu_.pdf)

Commission (SERC). The inter-state trading licensees are allowed to also undertake intra-state trading, as their license covered trading within the whole of India.

At the same time, there was a question on SERC regulations and the manner of their implementation on inter-state trading licensees. For example, if inter-state trading licensee violated a state level trading margin cap, while there was no violation of inter-state trading license regulations and licence, can action be initiated against the licensee? In an amendment in October 2012, CERC settled this issue by stating that inter-state licensee will have to also abide by regulations on intra-state trade while undertaking intra-state trade. In the associated explanatory memorandum, CERC also clarified that in case of violations that require debarring of a licensee from a State jurisdiction, the respective SERC can issue orders and then refer the matter to CERC for implementation.

*“However, if the licensee fails to comply with the trading margin of the concerned State Commission and if the concerned State Commission is of the view that the licensee shall be debarred from trading within the State, the State Commission will issue such order and refer the matter to the Central Commission to take appropriate action against the licensee since the Central Commission is the Appropriate Commission in respect of the said licensee and debarring the licensee from carrying out intra-State trade within a State would amount to change in the terms and conditions of the licence.”*

#### **4. Ensuring the absence of legislative and regulatory ambiguities**

While drafting the legal and regulatory framework, it is necessary to ensure that there are no ambiguities that may cause disputes and legal proceedings.

For example, initially, CERC's trading licence regulations, including the definition of inter-state trading did not cover cross border trade, even though trading licensees such as PTC were undertaking such transactions. This even led to disputes on whether restrictions such as those on trading margin are applicable in the case of cross border trade. Therefore, on October 2012, CERC amended its trading licence regulations to cover CBET under the definition of inter-state trade.

*“‘inter-State trading’ means purchase of electricity from one State for re-sale in another State and includes electricity imported from any other country for re-sale within India or exported to any other country subject to compliance with applicable laws and clearance by appropriate authorities.”*

#### **5. Delays in finalization of legislative and regulative frameworks**

There was a gap of about 4 years, between the establishment of the first major electricity trading company in the country (Power Trading Corporation of India) and the adoption of legislative framework for trading licensees. While PTC was established in 1999, Electricity Bill was introduced in Parliament in 2001, which subsequently became a law only in 2003. It took another seven months for the Central Electricity Regulatory Commission to come up with the final regulations concerning the procedure for grant of licence after due public consultations. A timeline of the major milestones in institutionalization of trading licence regime is provided below.

**Table 13: Key milestones in establishing trading licence regime in India**

| Date             | Description                                                                                                                                                                                                           |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 30 August 2001   | Electricity Bill, 2001, with provisions for trading licensees, introduced in the Parliament of India.<br>Bill referred to the Standing Committee on Energy on the next day.                                           |
| 19 December 2002 | Report of the Standing Committee on Energy regarding Electricity Bill 2001 presented to Lok Sabha (Lower House of the parliament.)                                                                                    |
| 05 May 2003      | Electricity Bill, 2001, with amendments suggested by the Standing Committee, was passed by the Lok Sabha on 09 April 2003 and subsequently by the Rajya Sabha (Upper House of the parliament of India) on 05 May 2003 |
| 26 May 2003      | Electricity Act 2003 receives the assent of President of India                                                                                                                                                        |
| 10 June 2003     | Electricity Act 2003 comes into force                                                                                                                                                                                 |
| 30 January 2004  | Central Electricity Regulatory Commission notifies the CERC (Procedure, Terms & Conditions for grant of Trading Licence and other related matters) Regulations, 2004                                                  |

Therefore, possibility of delays in legislative and regulatory processes may be kept in mind while designing the trading licence regime.

It is also noteworthy that CERC was able to provide a transitionary mechanism for the time between notification of Electricity Act, 2003 and notification of regulations for trading licensees. Therefore, by an order dated 22 July 2003, CERC permitted PTC to continue trading as the regulations governing qualification criteria and other procedures for trading licensees were not in place. Similarly, in April 2004, CERC allowed various trading license applicants such as Adani Energy and Global Energy to undertake trading at their own risk till 15 May 2004, as their petitions for grant of trading licence were still pending before the Commission.

## 6. Other challenges

Some trading licensees were posting the scanned images of the statutory information on their trading activities, which was to be made available on their website. It was observed that in many instances the information displayed on the licensees' website was not clear and readable. To avoid such situations and to maintain uniformity in the manner of posting information on the website, CERC amended its regulations on trading licence, to make it mandatory for the licensees to post information only in text converted PDF format and not images of the documents.

Further, even as on 2017, the trading licensees are required to submit hard copy of their monthly transaction details, supported by an affidavit. CERC has so far refrained from allowing submission of the same via soft-copy citing that the same lacks the strength of a signed affidavit.

### Case study:

#### **Power Trading Corporation of India (PTC India)**

In the mid-1990s, the power generation capacity in India was not adequate to meet the demand. In the macro-economic scenario that prevailed at the time, large scale investments by the government was not possible. Private investment was viewed favourably, but investors considered it risky to make large scale investments in spite of promotional measures such as the Mega Power Policy of 1995 owing to poor financial condition of the State Electricity Boards (SEBs) to which they were to sell electricity. Payment risk was viewed as a major concern. In this backdrop, on November 1998, Government of India came up with the revised guidelines for its Mega Power Policy. As per these guidelines, a separate trading company was formed by the government to purchase power from mega projects (capacity of 1000 MW or more) and resell it to multiple states, while providing payment security to the sellers.

*“Power Trading Company (PTC) would be established with majority equity participation by Power Grid Corporation of India Ltd. (PGCIL), along with NTPC, Power Finance Corporation (PFC) and other financial institutions. Concerned State Governments/State Electricity Boards (SEBs) would also be co-opted, if found feasible. The PTC would purchase power from the identified private projects and sell it to the identified State Electricity Boards. As power would be sold to the States, the concurrence of the concerned State Governments would be taken. Security to the PTC would be provided by means of a Letter of Credit and recourse to the State’s share of Central Plan Allocations and other devolutions. However, PTC may also, if feasible, supply power directly to a cluster’, like licensees and industrial establishments. The setting up of PTC would enable mega-projects to negotiate with one buyer only and would eliminate mega-projects risk regarding payments. Such security would substantially bring down the tariff from such projects.”<sup>2</sup>*

In line with the new policy, the Government of India established the Power Trading Corporation of India (PTC) in April 1999. The company introduced weekly billing and payment system, and a basic payment security mechanism, which provided comfort to the power producers. The company also managed to link private generators with government owned state electricity boards.

It may be noted that cross border trade also had an impact on the establishment of PTC. Cross border trading from Bhutan to 6 Indian states was being handled by the PGCIL, even though its core business was power transmission. The government wanted a dedicated trading company to take over such cross border trading. Subsequently, PTC took over the electricity trade between Bhutan and India in 2002.

PTC was set up as a government promoted entity in 1999. Shareholding of the Government owned Public Sector Units (PSU) and presence of Government nominees in the board of directors of PTC provided it with better acceptability, especially among the government owned electricity utilities. The ownership of Central Government PSUs in PTC, which initially stood at 60% was gradually diluted to 32% in 2003, and to 16% in 2016.

It is also noteworthy that CERC was able to provide a transitional mechanism for the time between notification of Electricity Act, 2003 and notification of regulations for trading licensees. After the notification of Electricity Act, 2003 PTC could no longer operate without a trading licence from CERC. However, when PTC approached for grant of licence, CERC could not award the same as the regulations governing qualification criteria and other procedures for trading licensees were not in place. Therefore CERC, by an order dated 22 July 2003 permitted PTC to continue their trading activity until 31 December 2003. Later, this period was extended to 31 March 2004, and subsequently to May 2004. Subsequently, once the final Regulations for trading licensees were notified by Jan 2004, PTC was granted a licence under the new Regulations after completion of all procedures and conditions specified under the Regulations.

PTC has consistently maintained its dominant position in the Indian power market, and as of FY 2015-16 maintains a market share of 29%.

<sup>2</sup> Ministry of Power, Government of India (November 2008) - Revised guidelines for mega power policy - <http://powermin.nic.in/en/content/policy-setting-mega-power-projects-pvt-sector>

### Implications for trading licence regime in South Asia

- Similar to the international experience, the institutionalization of trading licence regimes in South Asian countries can be driven by a combination of government policy, legislation and regulation. In some countries, like Bhutan, some aspects of trading licence regime is already present, and only enhancement of the same will be needed.
- The legislative regime for trading licensees may be amended to cover cross border trade also, in case the existing framework covers only trade within the country.
- In the initial phases of introduction of trading license regime, qualification criteria may be kept at higher levels to ensure that only serious participants are encouraged to participate. As the market matures, the criteria can be relaxed.
- The trading licence framework shall have provisions for monitoring of licensee's performance and for intervention of regulatory commissions to keep prices under check.
- If a trading licensee of one country fails to comply with the regulations of another country with which it has engaged in CBET, there can be a mechanism wherein the regulatory commission of the latter can recommend adequate action from the regulatory commission of the trading licensee's host country, subject to the host country's laws.
- Legal and regulatory frameworks for trading licence regimes shall be compiled in a forward looking manner so that there will be no ambiguities when the trading licensees are allowed to do cross border trade.
- In case of a delay in setting up / modification of trading licensee regimes, transitional mechanisms could be prescribed.

## 4.3 South Africa

### 4.3.1 Salient features and key drivers in institutionalizing trading license regimes

In South Africa, as per the Electricity Regulation Act 4 of 2006, 'trading' is defined as the buying or selling of electricity as a commercial activity. As per Section 4 of the Act, the National Energy Regulator of South Africa (NERSA) is appointed as the authority to consider applications and issue licences for import and export of electricity and for trading.

#### *"4 Powers and duties of Regulator*

##### *The Regulator-*

##### *(a) must-*

##### *(i) consider applications for licences and may issue licences for-*

##### *(aa) the operation of generation, transmission or distribution facilities;*

##### *(bb) the import and export of electricity;*

##### *(cc) trading;"*

Further as per Section 7 of the Act, import and export of electricity and trading are declared as activities to be undertaken only after obtaining licence from the Regulator.

#### *"7 Activities requiring licensing*

##### *(1) No person may, without a licence issued by the Regulator in accordance with this Act-*

##### *(a) operate any generation, transmission or distribution facility;*

##### *(b) import or export any electricity; or*

##### *(c) be involved in trading."*

Sub clause 3(b) of Section 7 also states that the Regulator must furnish the licence applicants with all information necessary to facilitate the filing of an application for a licence. The Act is also forward looking with respect to licensing, and has provisions for future de-regulation of

licensing regime by the Minister of Minerals and Energy, to be replaced by mere registration before the Regulator.

**“8 Certain activities not licensed**

*The Minister may, after consultation with the Regulator and stakeholders in the advisory forum, determine by notice in the Gazette that any activity contemplated in section 7 (1) need no longer be a licensed activity from the date set out in such notice.*

**9 Registration**

*(1) The Minister may, in consultation with the Regulator, determine by notice in the Gazette that any person involved in an activity relating to trading or the generation, transmission or distribution of electricity that does not require licensing in terms of section 7 read with section 8 must register with the Regulator...”*

Summary of the rest of clauses regarding licensing regime for trading in the Electricity Regulation Act is provided below.

**Table 14: Legislative framework for licensing regime in South Africa**

| Section                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 10 – Application for licence              | <p>Licence application along with application fee shall be prepared in compliance with the formats and procedures prescribed by the Regulator.</p> <p>The licence application must include:</p> <ul style="list-style-type: none"> <li>• description of applicant, including their vertical and horizontal relationships with other persons engaged in electricity industry activities</li> <li>• documentary evidence of the administrative, financial and technical abilities</li> <li>• description of the proposed licensed service</li> <li>• description of the type of consumer to be served and the tariff, price and policies to be applied, etc.</li> </ul> |
| Section 11 - Advertising of licence application   | <ul style="list-style-type: none"> <li>• Regulator to prescribe the appropriate media wherein the license application notice shall be published by the applicant.</li> <li>• Regulator to prescribe the period available for filing of objections.</li> <li>• Regulator must consider the objections and must make its decision available to the public together with its reasons for such decision.</li> </ul>                                                                                                                                                                                                                                                       |
| Section 12 - Information to be supplied           | Regulator must furnish applicants with all substantiated objections in order to allow the applicant to respond.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Section 13 - Finalisation of application          | License applications to be finalised within 120 days after receiving reply to objections and receiving any additional information, if requested from the applicant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Section 14 - Conditions of licence                | Regulator may specify licence conditions such as information reporting, price approval, performance targets, restrictions etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Section 16 - Amendment of licence                 | The Minister of Minerals and Energy will prescribe the procedure to be followed in varying, suspending, removing or adding any licence condition which will be followed by the Regulator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Section 17 - Revocation of licence on application | The Minister of Minerals and Energy will prescribe the procedure to be followed in revoking a licence which will be followed by the Regulator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Section                                                                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 18 - Contraventions of licence                                                    | <p>In case of allegations of contravention of licence condition or provisions of the Act by the licensee, the Regulator may sit as a tribunal to decide on the allegation.</p> <p>In case the allegation is proved, the Regulator may serve a notice on the licensee to ensure compliance within a prescribed reasonable time.</p> <p>In case of failure to abide by the notice, the Regulator/tribunal may impose a penalty of up to 10 percent of annual turnover of the licensee of R2 000 000 (nearly 1.5 Lakh USD), whichever is higher.</p> |
| Section 19 - Order by court                                                               | The Regulator may apply to the High Court for an order suspending or revoking a licence if there is any ground justifying such suspension or revocation.                                                                                                                                                                                                                                                                                                                                                                                          |
| Section 20 - Renewal of licence                                                           | <p>Period of validity of trading licence shall be determined by the Regulator.</p> <p>When a licensee applies for renewal of license, the application must be granted, but the Regulatory may set different licence conditions.</p>                                                                                                                                                                                                                                                                                                               |
| Section 30 - Resolution of disputes by Regulator                                          | <p>In case of dispute between two licensees, the Regulator must act as mediator, if so requested by both parties to the dispute. The Regulator may also appoint a suitable person to act as mediator on its behalf. The Minister of Minerals and Energy must prescribe the procedure for mediation and the fees.</p> <p>In case of dispute between licensees and end users, the Regulator must settle the dispute by any means that the Regulator thinks fit.</p>                                                                                 |
| Section 31 - Remedies against decisions of Regulator                                      | Proceedings can be initiated in the High Court against the rulings of Regulator. (Not applicable in the case of mediation)                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Section 32 – Investigations                                                               | <p>Regulator must investigate, at its own instance or on receipt of complaint regarding violation of licence conditions, and discrimination by the licensee.</p> <p>Regulator may appoint a person to chair the investigation and as many persons as may be necessary to assist with the investigation.</p>                                                                                                                                                                                                                                       |
| Section 35 - Regulations, rules, guidelines, directives and codes of conduct and practice | <p>Regulator may, after consultation with licensees, municipalities that supply electricity and other interested persons, make guidelines, codes of conduct and practice, and rules by notice in the gazette.</p> <p>The Minister of Mineral and Energy may, by notice in the Gazette make regulations regarding activities under the Act.</p>                                                                                                                                                                                                    |

#### 4.3.2 Barriers in institutionalizing trading licence regimes

As discussed earlier, market structure plays a key role in enabling trading licence regime. Therefore, the absence of a conducive market structure can act as a barrier for trading licence regime. One of the best example is the case of South Africa, wherein, the trading licence regime has not evolved despite the presence of legislative framework due to market structure and executive policy decisions. The Electricity Regulation Act 4 of 2006 provides a detailed legislative framework for trading licence regime. However, even before a proper trading licence market could shape up, in 2007, the South African Government took a decision to appoint Eskom as the “only” buyer of power from independent power producers. This has restricted

the operation of a proper trading framework, thereby ensuring that no trading licensees are set up. The only exception to this was made in the case of trading of renewable energy, wherein an entity named PowerX (Pty) Limited (earlier known as Amatola Green Power (Pty) Limited was granted trading licence, initially for a 5 year period from 2009 to 2014, and thereafter for a 15 year period commencing from 2014 to trade within the territory of South Africa. This was allowed initially as part of a pilot program of the government.

#### **PowerX – South Africa’s first electricity trading licensee**

In 2002, South Africa’s Department of Minerals and Energy (DME) initiated a pilot project with Amatola Green Power to demonstrate the existence of a market for green power trading. The pilot project for trading in green power was conducted during 2005 to 2007.

A governance committee comprising representatives from the DME, Eskom, NERSA and the Association of Municipal Electricity Utilities (AMEU) was constituted to approve all new suppliers and buyers of the electricity during the tenure of the pilot program. The company’s first supplier was Tongaat Hulett Sugar, which sold its surplus electricity generated from the burning of its sugar bagasse. One of the first customers of the company was the Buffalo City Municipality. To enable the success of pilot program, Eskom and the AMEU had granted Amatola access to their network, to allow the electricity to be wheeled to end-consumers.

After reviewing the findings of the pilot program, National Government approved the establishment of a permanent green power trading market in January 2008. In early 2009, Amatola obtained a trading licence from NERSA to trade in green electricity. On January 2014, NERSA renewed and extended the trading licence of Amatola for a further period of 15 years. Amatola was renamed POWERX in February 2016.

The business model of PowerX has the following salient features:

- PowerX signs “Use of System Agreement” with the municipalities for access to their network.
- PowerX pays the municipalities, a Use of System fee per kWh of traded energy, which corresponds to the net profit the municipality is currently making per kWh.
- If the IPPs establish new projects within the municipal area itself, to utilize the PowerX market, there is possibility of reduction of Maximum Demand drawn by the municipality from Eskom, which would then result in reduction of demand charges billed by Eskom on the municipality.

PowerX is still evolving. As on May 2017, PowerX was known to have power purchase agreements with 7 different generators across SA, with a total capacity of 18.8MW. The supply is provided mainly to more than 50 consumers in the Nelson Mandela Bay Municipality, with which they have signed a use of system agreement for 20 years.

South Africa is reviewing Independent System and Market Operator (ISMO) Bill to rectify some of the defects in the market structure and open up the power market for more competition. The bill proposes to shift the system and market operation functions away from Eskom to a new entity called the ISMO. ISMO will also take over the functions of entering into agreements for cross border import / export of electricity. However, even in this case ISMO is envisaged as a single buyer, again restricting the space for the trading licensees. As per the ISMO Bill of 2012, the ISMO was also supposed to act as a trader of electricity to ISMO customers.

#### **4.3.8 Role of power traders**

Even though there is currently only one trading licensee active in South Africa – PowerX, it is acting as an enabler for development of renewable energy market and direct procurement of renewable energy by the consumers. The role played by PowerX is significant, as there are concerns on the willingness and ability of Eskom to enter into long term agreements for

purchase of renewable energy. Around 47 MU of RE generation is estimated to be traded to bulk / industrial consumers by PowerX in 2017.

#### **Implications for trading licence regime in South Asia**

- Some of the progressive provisions of the legislative framework for trading licensees in South Africa can be adopted in South Asia, such as the legally defined ceiling on penalties that can be imposed for contravention of licence terms, and the 120 day limit for finalisation of trading licence applications. Such clauses provide certainty and comfort to the investors.
- The abolition of single buyer market model is a necessary condition for a functioning trading licence regime in the domestic context.
- The industry structure may not be a constraint in almost all the SA countries, except in the case of Afghanistan where the electricity industry is under the vertically integrated utility - DABS. However, lack of open access framework in most South Asian countries is a significant barrier.

## **4.4 South African Power Pool**

### **4.4.1 Salient features and key drivers in institutionalizing trading licence regime**

In the South African Power Pool (SAPP), the Regional Electricity Regulators Association of Southern Africa (RERA) has developed their guidelines for regulating cross-border power trade<sup>3</sup>, which also deals with licensing for cross-border trade. The key aspects of RERA's guidelines on licensing of cross-border trading activities, imports and exports are summarized below:

- Subject to the national legal requirements, the Regulator will issue licences for cross border power trade, if the Regulator is satisfied that:
  - a. The application complies with the applicable legal and regulatory framework;
  - b. The applicant has demonstrated technical expertise to operate in compliance with any national grid code;
  - c. The applicant has demonstrated sufficient financial resources to undertake the cross-border trading activity;
  - d. Issuing a licence would not undermine national security of electricity supply
- The decision to issue a licence is made public, along with a summary of the licence conditions and terms.
- The licence makes it incumbent upon the licensee to comply with the prescribed planning and technical standards set out in the national policies, national grid code, and legal order or regulatory instruments and requirements to provide information to the Regulator.
- Where feasible, the Regulator will avoid duplicating requirements in licence procedures
- Where the regulator proposes to terminate a licence before the expected expiry date of an associated cross border agreement, the Regulator will:
  - a. Base its intention to terminate on grounds stated in the licence for termination
  - b. Inform the applicant of the reasons for the proposal to terminate the licence and the actions that the applicant can take to remedy the termination event;
  - c. Give the applicant an appropriate opportunity to make representations;

<sup>3</sup> RERA (2010), Guidelines for Regulating Cross-border Power Trading in Southern Africa - [https://www.esmap.org/sites/esmap.org/files/P111483\\_AFR\\_Guidelines%20for%20Regulating%20Cross-border%20Power%20Trading%20in%20Southern%20Africa\\_Hughes.pdf](https://www.esmap.org/sites/esmap.org/files/P111483_AFR_Guidelines%20for%20Regulating%20Cross-border%20Power%20Trading%20in%20Southern%20Africa_Hughes.pdf)

- d. Provide the applicant with reasonable time to remedy the termination event;
- e. Give final notification to the applicant prior to terminating the licence.

The regulatory bodies of Lesotho, Malawi, Mozambique, Namibia, South Africa, United Republic of Tanzania, and Zambia are reported to have adopted these guidelines for implementation.

In the Day Ahead Market (DAM) of the South African Power Pool, the traders are allowed to trade directly, subject to the satisfaction of the following conditions:

- Having been licensed or given permission by the host country to undertake cross border trade
- Acceptance as a Market Participant by SAPP Executive Committee
- Are party to a Transmission System Operator (TSO) connected to a SAPP Control Area and have arrangements for Balance Responsibility
- Have signed the DAM governance documents
- Have opened the requisite accounts with requisite security for the trading purposes
- Have at least two trained traders

#### **4.4.2 Enabling factors in institutionalizing trading licence regimes**

The Regional Electricity Regulators Association of Southern Africa (RERA) has developed their guidelines for regulating cross-border power trade, which also deals with licensing for cross-border trade. The presence of such a regional body can act as a key enabler for institutionalization of trading licence regimes, if and when SAPP decides to create more favorable conditions for a more competitive power pool with the introduction of pure play trading licensees as market participants.

#### **4.4.3 Barriers in institutionalizing trading licence regimes**

Electricity trading in SAPP still seems to be restricted between the Government owned utilities and single buyers and IPPs. No stand-alone traders figure in the list of market participants in the annual reports of SAPP. Though the exact reason for non-participation of trading licensees is not known, the constraint in trading licence regime in South Africa, which has the bulk of generation capacity in SAPP, might be playing a key role.

##### **Implications for trading licence regime in South Asia**

- In SAPP, RERA only prescribes guidelines. The regulators of the respective countries authorize trading licences for cross-border trade. This model may be suited to South Asia. An association of regulators at the regional level can become an enabler for cross border trade involving trading licensees.

### **4.5 West African Power Pool**

#### **4.5.1 Salient features**

The West African Power Pool (WAPP) covers 14 of the 15 countries (Benin, Côte d'Ivoire, Burkina Faso, Ghana, Gambia, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo) of the Economic Community of West African States (ECOWAS).

WAPP was established to ensure Regional Power System integration and realization of a Regional Electricity Market. WAPP brings together 27 member companies operating in Public and Private Generation, Transmission and Distribution segments in West Africa. Along with regulatory and commercial mechanisms, WAPP master plan also deals with construction of interconnecting transmission lines between major WAPP countries.

WAPP envisions to integrate the national power systems into a unified regional electricity market – with the expectation that such mechanism would over the medium to long term ensure the citizens of ECOWAS Member States with a stable and reliable electricity supply at competitive costs. However, regional market implementation in WAPP is still in a very initial stage, with limited role, if any, for trading licensees.

#### **4.5.2 Enabling factors in institutionalizing trading licence regimes**

The existence of a Regional Electricity Regulator, with legal mandate on issues related to cross border electricity trade in the region, can be a key enabler for harmonization of trading licence regimes across regions. In the West African region, such a regional regulatory - ECOWAS Regional Electricity Regulatory Authority (ERERA) was established by the member states of the Economic Community of West African States (ECOWAS) in January 2008.

ERERA and its activities have the legal mandate of its member states. Its features:

- The ECOWAS energy protocol was adopted by all the heads of government of the member countries
- Major documents such as the Article of Agreement are endorsed in the Meeting of Energy Ministers organized by ECOWAS Secretariat.
- General Assembly, which is the highest decision making body for the WAPP, comprises the representatives of all member states. It is responsible for co-ordination and implementation of the principles of the Articles of Agreement. It also facilitates the implementation of programs and projects.

As per ERERA's Operations Act under Regulation C/Reg.27/12/17<sup>4</sup>, ERERA shall:

- Draft and assist in the adoption by Member States, of harmonized criteria for granting of licences and authorizations for participants in the regional market.
- Approve applications proposed by national regulatory authorities for authorizations of licences to participate in the regional market,.

However, it may be noted that the launch of regional power market in WAPP is still in a very initial stage. It remains to be seen how effective shall be ERERA in institutionalizing trading licence regime for cross border trade.

#### **Implications for trading licence regime in South Asia**

- Harmonization of regulations at regional level is a key component for enabling cross border trade involving non-utility entities such as trading licensees.

### **4.6 Central American Electrical Interconnection System (SIEPAC)**

#### **4.6.1 Salient features and key drivers in institutionalizing trading licence regimes**

The regional electricity market (MER) for Central America, established with the help of 1800 km long SIEPAC backbone, is treated as the seventh electricity market in the region, which could be accessed by market agents in any of the six national electricity markets.

Among the six Central American countries, Guatemala and El Salvador already have some form of trading licence regime / regulatory regime that supports trading activity.

In Guatemala, as per the General Electricity Law 1996 that governs the electricity industry, licensing or authorization is not required in the case of electricity traders. Trader is defined as the person, individual or legal, whose activity is to buy and sell blocks of energy, with

<sup>4</sup> ERERA (15 December 2007), Composition, Organisation, Functions and Operation of the ECOWAS Regional Electricity Regulatory Authority - <http://erera.arrec.org/wp-content/uploads/2016/08/ERERA-s-Operations-Act.pdf>

an intermediary nature and without participation in generation, transmission, distribution and consumption. The traders come under the regulatory jurisdiction of the National Electric Energy Commission (CNEE).

In El Salvador, as per the General Electricity Law 1996, trader is defined as an entity that buys electricity from other operators for the purpose of resale. The law defines an “independent trader” as one with no equity interest in any other electricity operators. As per Article 7 of the General Electricity Law, the traders are required to register themselves annually with the Registry of Operators of the Electricity Sector maintained by regulator - Superintendencia General de Electricidad y Telecom (SIGET).

At the regional level, the Regional Commission for Electric Interconnection (CRIE) was set-up pursuant to the Framework Treaty for regional Electricity Market in Central America. The Commission has its own legal identity and has jurisdiction over the Regional Electricity Market (MER<sup>5</sup>).

As per the Regional Electricity Market Regulations (REMR), the trading licensees can participate in the MER as Market Agents. All the participants, except the transmission companies, are treated as market agents, with the same set of requirements, rights and obligations. (In case of transmission companies, they are required to undertake only transmission, and not any other commercial activities).

For authorization as the market agent to carry out transactions in the MER, the applicant must submit application to the regional system operator - Ente Operador Regional (EOR) through their respective System Operator / Market Operator, with the following documents / information:

- i. Application for authorization to carry out transactions in the MER
- ii. Proof of being duly authorized in the domestic market to participate in international transactions, extended by the System Operator or Market Operator or the corresponding authority
- iii. Certificate issued by its System Operator or Market Operator that certifies compliance with the applicable technical requirements, according to the type of agent on the market
- iv. Minimum guarantee of payment in the MER

Thereafter, the process flow will be as per the following timeline.

**Table 15: Timeframe for authorization as market agents in SIEPAC**

| Time frame         | Authorization process                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zero day           | Submission of application to EoR for authorization                                                                                                                             |
| Previous + 5 days  | EoR to communicate additional information / clarification from the System Operator / Market Operator of the applicant                                                          |
| Previous + 10 days | Time limit of 10 days to provide reply on additional information. If no reply is received within 10 days, application is treated as withdrawn.                                 |
| Previous + 30 days | EoR to formally notify acceptance or denial of authorization, along with reasons. The System Operator / Market Operator of the applicant is also intimated about the decision. |

As per REMR, the market agents must immediately notify the EoR, through their System Operator / Market Operator, of any changes in their information related to the authorization request for transactions in the MER. The EOR will forward this information to CRIE, which will evaluate within 30 days whether the change in information is in compliance with the Regional Regulation and issue appropriate decisions.

<sup>5</sup> MER is the Spanish acronym for Mercado Eléctrico Regional

The key aspects of regulation and authorization of market agents, which will also be applicable in the case of trading licensees are provided below:

**Table 16: Authorization of market agents as per REMR**

| Aspect                            | Concise summary                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agent register                    | CRIE to maintain and publish a register of agents including the agents who have been suspended or withdrawn from MER, along with their contact details.                                                                                                                                                                                                                         |
| Rights of agents                  | <ul style="list-style-type: none"> <li>• Buy and sell energy in the MER freely and without discrimination in accordance with national and regional regulations.</li> <li>• Submit proposals for modifications to the RMER and be consulted on proposals for such modifications.</li> <li>• To go before the CRIE for the resolution of disputes related to the RMER.</li> </ul> |
| Obligations of agents             | <ul style="list-style-type: none"> <li>• Pay the charges that are due to EOR, CRIE and other market agents.</li> <li>• Establish and maintain payment guarantees.</li> <li>• Comply with sanctions and fines imposed by CRIE.</li> <li>• Furnish the information required by market operator / system operator.</li> </ul>                                                      |
| Technical requirements for agents | <ul style="list-style-type: none"> <li>• Availability of measuring equipment, owned or shared, at the point of interconnection with the regional grid.</li> <li>• Registration of the measuring equipment with EOR.</li> <li>• Compliance of equipment and installations with technical design standards of RMER.</li> </ul>                                                    |
| Suspension of transactions in MER | Agents can communicate their decision to stop participation in MER to EOR and CRIE, through their system operator / market operator, with minimum notice period of 3 months.                                                                                                                                                                                                    |
| Suspension of agents from MER     | In case of violations of RMER by the market agents, CRIE is empowered to suspend such agents from MER, temporarily or permanently.                                                                                                                                                                                                                                              |

#### 4.6.2 Enabling factors in institutionalizing trading licence regimes

In the Central American system, countries like Guatemala and El Salvador already had instituted legal / regulatory framework for trading, which allowed multiple traders to enter the market. These countries also had restructured their power markets, and introduced whole sale competition, thereby making the entry of traders in the power market feasible.

During the 1990s, the Central American countries initiated restructuring of their power sectors, aiming mainly at promotion of private sector participation. Most of these countries undertook breaking of monopolies, vertical and horizontal unbundling and transition to whole sale market during this time period. (El Salvador, Guatemala and Panama by 1998, and Nicaragua by 2000).

In 1996, the Central American countries agreed to create the Regional Electricity Market. The Framework Treaty for the Central American Electricity Market (MER) was ratified by the governments in 1998 based on the principles of competition, gradualism and reciprocity. The MER was structured as a seventh market available for the six countries, and therefore it could be implemented without a complete overhaul of the domestic markets.

### 4.6.3 Barriers in institutionalizing trading licence regimes

While the Regional Electricity Market Regulations for the Central American system was being thought of, different countries in the system were under different stages of market development, and there was no regulatory harmonization. This barrier was surmounted by the market participants using the following strategy:

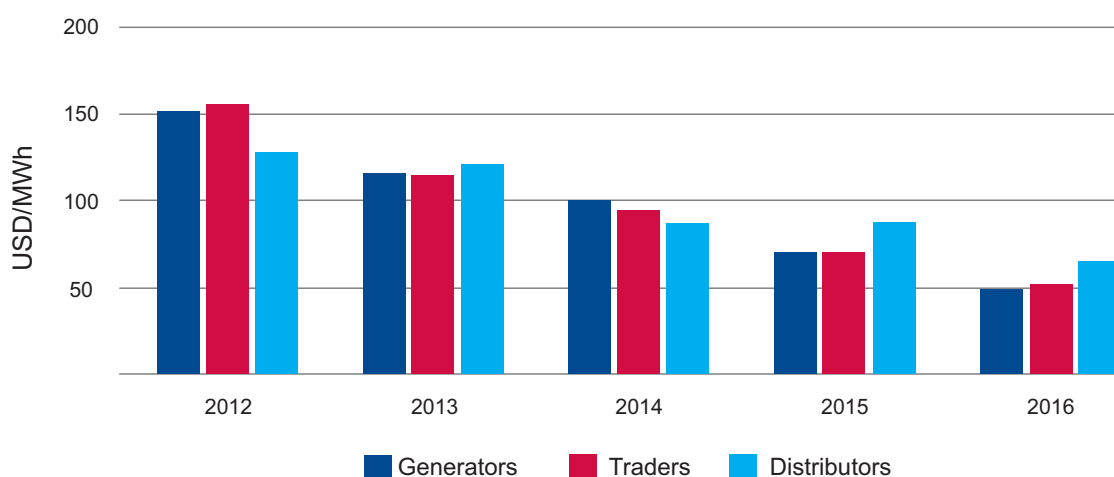
- A transitional regional regulatory regime was specified initially, which was stated to be simple, and supports the independence of the national regulations.
- While the transitional regime was being implemented, efforts also started for market restructuring and harmonization of regulations among the Central American countries.
- Once regulatory harmonization and market restructuring was successfully introduced in at least some of the countries, the final regional regulatory regime was introduced.

### 4.6.4 Role of power traders

The power traders in Central America can be found to play a significant role both in domestic and international markets, which is best illustrated in the case of Guatemala.

In Guatemala, in 2014, around 3314 MU of energy was bought by the bulk consumers from power traders. This represented an 18% increase from the previous year, and is nearly one third of the total energy generation in the country.

**Figure 20: Competitiveness of rates offered by traders in Guatemala**



Source: Rough estimation and analysis based on graph provided in CNEE's Statistical Report, 2016

In the cross border trade, more than 40% of the exports in 2014 were undertaken by the power traders.<sup>6</sup>

### 4.6.5 Challenges in design and implementation of trading licence regimes

When the trading market provides more attractive rates than the long term rates, there is a possibility that the generators / suppliers may renege on their long term supply commitments and divert a quantum of their capacity to traders to obtain gains. In Guatemala, such a concern was raised in June 1999 by the General Administrator of Wholesale Market against the decision of one distribution company - Empresa Eléctrica de Guatemala SA to enter into a contract for sale of 22 MW with one of the traders - Comercializadora Eléctrica de Guatemala, SA. It was contended by the parties that contract is valid as the 22 MW is the surplus available with the distributors.

<sup>6</sup> CNEE (2015), Statistical information of market in 2014 - <http://www.cnee.gob.gt/xhtml/memo/Informe%20estadistico%202015.pdf>

In an order dated 23 June 1999, the regulator – CNEE issued its order<sup>7</sup>, clarified that such trading shall be allowed only in the short term opportunity market, as only then will it be clear if power is really surplus. Request for trading in the term market, wherein contract period and rates were flexible were denied.

#### **Implications for trading licence regime in South Asia**

- A well maintained “agent register” / “trading licensee register” detailing information such as affiliates, penalties imposed by regulators if any, validity of licence, category of licence etc. can be useful tool for the stake holders to ascertain the track-record of trading licensees.
- Presence of whole sale competition in the power market is a necessary condition for a functioning trading licence regime.
- If the ideal objectives of cross border trade are not immediately achievable, simple transitional mechanisms may be initially put in place, during which time efforts can be made to overcome the barriers in institutionalizing a well-defined trading licence regime.
- Trading licence regime must have safe-guards to ensure that the interests of retail consumers are also protected, and that market trading activities are not promoted at the expense of affordable power to the regular consumers.

## **4.7 Interconnection of United States of America with Mexico and Canada**

### **4.7.1 Salient features and key drivers in institutionalizing trading licence regimes**

In the United States of America, wholesale power trade involving inter-state commerce comes under the jurisdiction of Federal Electricity Regulatory Commission (FERC). However, there is no licensing regime for the power marketers. Instead, power marketers approach FERC for obtaining a “Market based rate (MBR) authorization”.<sup>8</sup>

FERC classifies the power marketers as either Category 1 or Category 2. A Category 1 seller is a seller that meets the following criteria:

- i. it is either a wholesale power marketer that controls or is affiliated with 500 MW or less of generation in aggregate per region or a wholesale power producer that owns, controls or is affiliated with 500 MW or less of generation in aggregate in the same region as its generation assets;
- ii. it does not own, operate or control transmission facilities other than limited equipment necessary to connect individual generation facilities to the transmission grid (or has been granted waiver of the requirement to file an Open Access Transmission Tariff or satisfies the requirements for a blanket waiver under 18 C.F.R 35.28(d)(2));
- iii. it is not affiliated with anyone that owns, operates, or controls transmission facilities in the same region as the seller’s generation assets;
- iv. it is not affiliated with a franchised public utility in the same region as the seller’s generation assets; and
- v. it does not raise other vertical market power concerns.

A Category 2 seller is any seller that is not in Category 1. The Category 1 sellers have lesser compliance requirements in comparison to that for Category 2.

<sup>7</sup> CNEE (23 June 1999), RESOLUCION CNEE-14-99 - <http://www.cnee.gob.gt/pdf/resoluciones/1999/14-99.pdf>

<sup>8</sup> FERC, FAQs on Electric Market-Based Rates - <https://www.ferc.gov/industries/electric/gen-info/mbr/faqs.asp>

On application, FERC grants market-based rate authorization for wholesale energy sales to sellers who are able to demonstrate that they and their affiliates lack or have adequately mitigated horizontal and vertical market power. The following information shall accompany the application for MBR authorization:

- Information regarding ownership of the company
- A description of the business activities of the applicant's owners and affiliates, stating whether its owners or its affiliates are in any way involved in the energy industry.
- A description of the kinds of services to be offered under the market-based rate tariff.
- A demonstration that the applicant lacks horizontal market power. Applicants must include the wholesale market share and pivotal supplier indicative screens and file these indicative screens in a workable electronic spreadsheet format
- An explanation of how the applicant lacks vertical market power. The vertical market power representations for inputs to electric power production must cover all regions. Applicant should include, verbatim, an affirmative statement that it and its affiliates "have not erected barriers to entry into the relevant market and will not erect barriers to entry into the relevant market."
- Representations regarding whether the applicant is a Category 1 or Category 2 seller for each region in which it seeks market-based rate authority.
- A proposed market-based rate tariff using XML and filed in FERC's eTariff system.
- An asset appendix that includes all generation assets, long-term firm purchase contracts, transmission assets, and natural gas intrastate pipelines and gas storage facilities owned or controlled by the applicant or any of its affiliates.
- Company identifier (CID) obtained from FERC's online Company Registration application.

The Market-based rate authorization is conditioned on certain continuing requirements such as:

- Filing post-transaction electric quarterly reports (EQRs) for each calendar quarter. EQRs must be filed each quarter even if the seller has no sales to report for that quarter.
- Filing notices of change in status for any change that would reflect a departure from the characteristics the Commission relied upon in granting market-based rate authority.
- For Category 2 sellers, filing updated market power analyses every three years according to the schedule posted on the Commission's Web site.

Market based rate authorization is subject to payment of annual fees. For determining the same, the adjusted costs of administration of the electric regulatory program as it applies to Power Marketing Agencies will be assessed against each power marketing agency based on the proportion of the megawatt-hours of sales of each power marketing agency in the immediately preceding reporting year to the total megawatt-hour of sales of all power marketing agencies.<sup>9</sup>

In Some states like Texas, power marketers are also required to register before the respective Public Utility Commission / Regulatory Commission for undertaking wholesale trading in electricity. In Texas, the registration is to be done not later than 30 days after the date that the potential marketer first buys or sells electric energy at wholesale in Texas.

Power marketers can also engage in international cross border trade, with Mexico and Canada. However, exports of electricity from the United States to any foreign country are regulated by the Department of Energy (DOE) under powers granted to it in Department of Energy Organization Act, and require authorization under section 202(c) of the Federal Power Act (FPA).

<sup>9</sup> US Code of Federal Regulations, Title 18—Chapter I—Subchapter W—Part 382 - <http://www.ecfr.gov/cgi-bin/text-idx?SID=f1f7b47a1cb95e3f845991c307c152d1&mc=true&node=pt18.1.382&rgn=div5>

The request for authorization will be granted, if DOE has determined that the export of electric energy would not impair the sufficiency of electric power supply within the United States, and that it would not impede or tend to impede the coordination in the public interest of facilities. However no such authorizations are required in the case of imports. The authorization will be granted for a period of 5 years, which may be further renewed within six months prior to the expiration of authorization.

#### **4.7.2 Enabling factors in institutionalizing trading licence regimes**

Open access in transmission, which is a key enabling factor for trading licence regime, has been implemented in USA since the mid-1990s. FERC's Order No. 888 required mandatory open transmission access to be provided by all transmitting utilities. FERC's order No. 889 addressed matters needed to implement open access. The rule established the Internet-based Open Access Same-Time Information System (OASIS) for posting available transmission capacity and reserving transmission capacity.

Meanwhile, a mechanism was under place wherein President authorizes certain transmission lines to be used for cross border electricity transactions. This allowed power marketers to indulge in cross border trade utilizing these lines.

#### **4.7.3 Barriers in institutionalizing trading licence regimes**

While processing the requests from wholesale marketers for market based authorization, FERC was forced to analyze the requests on a case by case basis, as there weren't any common streamlined rules / orders regarding the same. Later, in 2006, FERC floated a notice for proposed rule-making for market based authorization, which finally culminated in FERC's order no. 697 in June 2007. This order gave a detailed description of the kind of market power mitigation and other aspects that need to be looked into, and the modalities for granting MBR authorization. The well-defined guidelines under order no. 697 streamlined the process for granting MBR authorization, thereby aiding the power marketers.

#### **4.7.4 Role of power traders**

In the USA, power marketers have played a key enabling role in wholesale competition, giving substantial choice to consumers in terms of both price and flexibility. The power marketers in US were also able to combine the physical products with risk mitigation instruments / derivatives such as futures. Many of the power marketers also offered services in gas trading also.

The power marketers have also progressed from offering only wholesale sales to also offering retail sales. In 2015, the retail power marketers in USA served around 12 million consumers, with sales of over 512 GU.<sup>10</sup>

#### **4.7.5 Challenges in design and implementation of trading licence regimes**

The key challenges in the institutionalization and operation of regime for power marketers and the mitigation measures adopted in the United States of America are explained in the following paragraphs.

##### **1. Prevention of market manipulation**

In the absence of a well-defined licensing regime derivative trading without physical settlement makes it difficult to monitor market abuse by power traders.

Sections 205 and 206 of the Federal Power Act deal with the authority of the FERC over the reasonableness of an electricity utility's rates, terms and conditions for transmitting or selling electric energy in interstate commerce. Based on its own market monitoring activities, or based

<sup>10</sup> US Energy Information Administration (2016), Electric power sales, revenue, and energy efficiency Form EIA-861 detailed data files - <https://www.eia.gov/electricity/data/eia861/>

on complaints, FERC can initiate proceedings under Section 206 of the Federal Power Act to investigate market manipulation and abuse. Some of the cases wherein FERC imposed penalties for market manipulation in power trading activities are listed below.<sup>11</sup>

- July 30, 2013 – FERC approves market manipulation settlement with JP Morgan Ventures Energy Corporation, resolving allegations that the company engaged in multiple strategies in the CAISO and MISO markets intended to obtain above-market payments through fraudulent billing practices. \$285 million in penalties.
- July 16, 2013 – FERC issues an Order Assessing Civil Penalties against Barclays Bank for alleged manipulation in connection with trading electricity in the western United States to affect the index price at which related financial instruments settled. \$435 million assessed civil penalty for Barclays.
- January 22, 2013 – FERC approves market manipulation settlement with Deutsche Bank Energy Trading, resolving allegations that the company traded exports in CAISO to affect the value of related congestion revenue rights. \$1.5 million in penalties.
- March 9, 2012 – FERC approves settlement with Constellation Energy Commodities Group, resolving allegations that the company traded energy in ISO-NE and NYISO markets to affect market prices in financial instruments based on those prices, and misrepresented the purpose of the trades to the NYISO market monitor. \$135 million in penalties.

However, there are substantial challenges to such case by case monitoring. In some cases, it might be very difficult to obtain conclusive proof of market abuse. In such cases, the option for entering into settlement with the traders becomes useful, wherein traders pay a penalty without admitting to the market manipulation.

FERC has also published a white paper on anti-market manipulation enforcement efforts<sup>12</sup>. The whitepaper lists some of the market manipulation mitigation initiatives employed by FERC, which are linked to FERC's penalty guidelines, wherein credits are given against the culpability score calculated against the entity under investigation in the following cases:

- a. Under the Penalty Guidelines, entities can receive up to a three-point credit to reduce their culpability score for having instituted an effective compliance program. FERC explains that this credit can even reduce the overall penalty by up to 60%. FERC has also highlighted the case of "Direct Energy" in 2014, wherein the presence of a compliance program resulted in discovery of a market manipulation. Upon enquiry, a lower penalty was given while recognizing the robust compliance program which resulted in detection of the manipulation.
- b. Commission provides a two-point self-reporting credit under the Penalty Guidelines, which, alone, can result in a forty percent reduction in base penalty amount. This encourages the firms to report all detected cases of market manipulation.
- c. Commission provides a one-point credit for cooperation to reduce a company's culpability score. To receive the credit, the cooperation must be timely and thorough, meaning that it begins at the time an entity is notified of an investigation and results in the disclosure of information "sufficient for the Commission to identify the nature and extent of the violation and the individual(s) responsible for the violation."

## 2. Emergency powers to suspend trading

In case of rare emergencies, there may be a need to curtail the free market operations, and direct the generators and traders to supply energy to meet the local utility / system operator's requirements. In US, such powers were already available to the Department of Energy, under Section 202 of the Federal Power Act. This emergency provision was utilized by DoE in 2001,

<sup>11</sup> FERC, Prohibition of Energy Market Manipulation - <https://www.ferc.gov/enforcement/market-manipulation.asp>

<sup>12</sup> FERC (November 2016), Staff white paper on anti-market manipulation enforcement efforts - <https://www.ferc.gov/legal/staff-reports/2016/marketmanipulationwhitepaper.pdf>

wherein pursuant to the California energy crisis, a group of generators and traders were directed to provide energy to the California ISO.<sup>13</sup>

#### **Implications for trading licence regime in South Asia**

- The manner of segregating traders with negligible power market share as a separate category with lesser reporting requirements can be a useful in reducing the burden of regulators. In a slightly different manner, depending on trading volume, different level of detail for information reporting can be considered.
- The open access regime in the countries shall progress at least to the level of transmission open access, so that trading licensees can function effectively.
- Presence of well-defined guidelines / procedural documentation can assist the regulatory bodies in granting licences.
- While the conventional role and benefits of trading licensees as a market intermediary are well known, it may be noted that there are also indirect benefits such as encouraging private investments, providing an off-taking platform for green energy and encouraging the development of competitive power markets.
- The trading licence regime shall encourage the licensees to constitute effective regulatory compliance programs, to promote self-reporting of market violations and to co-operate fully with investigators.
- In rare instances such as national emergencies, there shall be provisions to curtail/control the trading activities in the national interest.

## **4.8 Other major regional power markets and power pools**

### **4.8.1 Nordpool**

As per Norwegian Water Resources and Energy Directorate (NVE), over 90 % of the physical power consumed in the Nordic area is traded through Nord Pool and the Day-Ahead Market. Even though there are bilateral contracts, they are mostly financially settled instead of being linked with physical delivery. The presence of energy linked derivative markets, and physical balancing products allow for such financial settlement of contracts. In such a market, the role of traders in physical electricity market becomes severely limited.

### **4.8.2 South East Asia - Greater Mekong Sub-region**

The South East Asian countries commenced energy co-operation under Greater Mekong Sub-region (GMS)'s intergovernmental agreement (IGA) on regional power trade in 1992. The Greater Mekong Sub-region (GMS) comprises Cambodia, the People's Republic of China (PRC), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Vietnam. The roadmap for development of power market in the GMS has been laid out by the World Bank and ADB in four stages:

- Stage 1 – Enabling country to country transactions
- Stage 2 – Enabling trading between any two GMS countries using transmission lines of a third country.
- Stage 3 – Third parties other than national power utilities are allowed to utilize regional interconnections
- Stage 4 – Establishment of multi-buyer and multi-seller regional market

The GMS market is currently in transition from stage 1 to stage 2. Currently, no timeline seems to have been specified for the shift to stage 3, when third parties such as trading licensees will be allowed to participate in the regional market.

13 Federal Register (29 December 2000), Order pursuant to Section 202(c) of the Federal Power Act - <https://energy.gov/sites/prod/files/Federal%20Register%20Notice%20-%20202%28c%29%20order%2012-14-00%20CA%20with%20Attachment%20A.pdf>

## 5 Lessons from other countries and international power pools

Table 17: Lessons from other countries and power pools

| Key ingredients of trading licence regime                                             | Lessons from other countries and power pools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legal framework for licensing and regulation of trading activity                      | <ul style="list-style-type: none"> <li>Electricity trading, and its licensing / registration, and subsequent regulation may be defined as part of statutory legislation so as to institutionalize a well-defined and predictable trading license regime. <i>(India – Electricity Act 2003, South Africa - Electricity Regulation Act 2006, El Salvador – General Electric Law 1996, Guatemala – General Electric Law 1996)</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Extensibility of trading licence regime to cover cross border trade                   | <ul style="list-style-type: none"> <li>Trading licence regime for cross-border electricity trade can be left to the respective national level regulatory commissions. Association of regulatory commissions at regional level can make non-binding recommendations for harmonization of regulations. <i>(RERA's guidelines for authorizing import and export, qualification requirements for participation in day ahead market of SAPP, India's proposed guidelines for cross border trade)</i></li> <li>An alternative model is also available wherein the application for cross border trade authorization may be submitted through the system / market operator at the country level to the regional level regulator and system operator. However, this mechanism can work only when treaty mechanisms are in place to set up regional level regulatory commissions and system operators. <i>(Regional Energy Market Regulations of Central American Interconnection System)</i></li> <li>In case of non-compatibility in regulations of participating nations in cross border trade, simple transitional mechanisms may be initially prescribed, and in the meantime efforts may be made for regulatory harmonization and development of final mechanisms for cross border trade. <i>(Regional Energy Market Transitional Regulations of Central American Interconnection System)</i></li> <li>Definition of trading in statutory Acts / Regulations may be amended to cover cross border trade of electricity. <i>(India)</i></li> </ul> |
| Power market structure that encourages competition                                    | <ul style="list-style-type: none"> <li>Power market should have progressed from vertical monopoly / single buyer model to whole sale competition, allowing trading licensees to source power from IPPs and other sources for re-sale. The necessity of this condition is evidenced especially in the case of South Africa, wherein, an executive order mandating all purchases to be done by the Government owned monopoly – Eskom is stifling the growth of trading industry.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Institution for grant of licences, and for regulation and monitoring of the licensees | <ul style="list-style-type: none"> <li>Regulatory commissions may be appointed as the institution for receiving, analyzing and approving the applications for grant of licence / registration / authorization for undertaking trading, and for the subsequent regulation and monitoring of trading activity. <i>(Example: CERC in India, NERSA in South Africa, FERC in United States, SIGET in El Salvador)</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Key ingredients of trading licence regime                                | Lessons from other countries and power pools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Segregation of licensees into different categories                       | <ul style="list-style-type: none"> <li>Defining different categories of trading licences based on trade volume, with different qualification criteria lowers entry barriers and prevents concentration of market power.<br/>(<i>Example: Category I to IV licensees in India</i>)</li> <li>Alternatively, segregation of licensees can be done based on their market power, with lesser reporting requirements in the case of licensees who do not have any market power. This allows the regulator to focus on the section of traders who are most likely to indulge in unfair practices.<br/>(<i>Example: Category 1 and 2 wholesalers in USA</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Technical requirements for grant of licence                              | <ul style="list-style-type: none"> <li>Technical qualification criteria to be kept at a minimum, with requirement specified for the competence of staff to undertake trading. (<i>India</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Financial requirements for grant of licence                              | <ul style="list-style-type: none"> <li>Financial qualification criteria based on net-worth linked with volume of trading and minimum current ratio and liquidity ratios. (<i>India</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Frameworks governing grant, amendment, renewal or revocation of licences | <ul style="list-style-type: none"> <li>Notifying a properly defined process for scrutiny of trading licence applications, identifying the key stakeholders and listing key timelines and milestones will enable a streamlined process for grant / amendment / revocation of licences.<br/>(<i>India, South Africa, United States of America, Central American Interconnection</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Market monitoring arrangements                                           | <ul style="list-style-type: none"> <li>Trading business requires continuous market monitoring and oversight on the part of the regulatory commissions, which may be enabled through mechanisms for periodic information dissemination and reporting.<br/>(<i>India – CERC’s information reporting forms as per trading licence regulations, United States of America – Online filing of information through FERC’s systems</i>)</li> <li>Incentives provided to the traders to institute compliance programs, to promote self-reporting of violations and to extend support to investigative agencies can play a significant role in prevention, identification and resolution of instances of abuse of market power and other unfair trading practices.<br/>(<i>FERC’s penalty guidelines with defined credits on overall culpability score for compliance, self-reporting and support</i>)</li> <li>A well maintained “agent register” / “trading licensee register” detailing information such as affiliates, penalties imposed by regulators if any, validity of license, category of license etc. can be a useful tool for the stakeholders to ascertain the track-record of trading licensees.<br/>(<i>Agent register maintained by CRIE under the provisions of Regional Energy Market Regulations</i>)</li> </ul> |

| Key ingredients of trading licence regime | Lessons from other countries and power pools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Funding                                   | <ul style="list-style-type: none"> <li>Funding for administering trading licence regime can be procured by the regulators through licence application fees and annual licence fees (<i>India</i>), or by annual registration fee (<i>Guatemala</i>).</li> <li>An alternative is the model adopted in United States wherein the costs of administration of the electric regulatory program as it applies to Power Marketing Agencies are assessed against each power marketing agency based on the proportion of the megawatt-hours of sales of each power marketing agency in the immediately preceding reporting year to the total megawatt-hour of sales of all power marketing agencies. (<i>US Code of Federal Regulations, 18 C.F.R. Part 382</i>)</li> </ul>                                                      |
| Dispute resolution mechanism              | <ul style="list-style-type: none"> <li>Regulatory commission may be empowered to solve disputes between licensees. The order can be further challenged in Appellate Tribunal and Supreme Court (<i>India</i>)</li> <li>Alternatively, Regulatory Commission may be appointed to act as mediator at the request of both the parties, in case of disputes between licensees. As it is a mediation initially agreed by both the parties, the order cannot be challenged in High Court (<i>South Africa</i>)</li> <li>In regional power pools, in case of presence of regional regulator, such entities may under-take dispute resolution related to cross-border trade. Billing related disputes may be resolved by the regional operator.<br/>(<i>CRIE and EOR in Central American Interconnection System</i>)</li> </ul> |
| Emergency provisions                      | <ul style="list-style-type: none"> <li>There shall be emergency provisions that empower regulatory agencies / government entities to curtail trading activities, which can prove useful in crisis situations.<br/>(<i>Section 202 of Federal Power Act, as utilized by the Department of Energy, USA in events such as the California energy crisis, Section 11 of Electricity Act in India</i>)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |
| Other provisions                          | <ul style="list-style-type: none"> <li>Licensees may be required to furnish information required under the reporting and monitoring framework to be only in text converted to PDF format so as to ensure that the information is legible. (<i>India</i>)</li> <li>Licensees required to submit workable spreadsheet models as party of information reporting and monitoring framework. (<i>USA</i>)</li> <li>Licensees may be allowed to submit regular market operation information over online systems. (<i>USA</i>)</li> </ul>                                                                                                                                                                                                                                                                                       |

## 6 Recommendations for institutionalization of trading licence regime in South Asia

Keeping in mind the identified ingredients of trading licence regime, and international best practices in power trading, including risk mitigation strategies adopted in different regions, following recommendations are identified for institutionalizing trading license regime in South Asia.

**Table 18: Recommendations for trading licence regime in South Asia**

| Key ingredients of trading licence regime                           | Recommendations for South Asia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legal framework for licensing and regulation of trading activity    | <ul style="list-style-type: none"> <li>• Apart from India and Bhutan, countries in South Asia region would need to introduce fundamental legislations to facilitate trading as a licensed activity.</li> <li>• Basic provisions regarding grant, amendment, revocation and renewal of licences, and the duties and obligations of licensees shall be incorporated in the legislative amendments, wherever such provisions are not present.</li> <li>• Initial licence validity period may be specified in the legislation itself, as is the case with India.</li> <li>• The legal framework may aid in providing predictability and may incorporate provisions such as a legally defined ceiling on penalties that can be imposed for contravention of license terms, and a time limit for finalisation of trading license applications after receipt of all clarifications and information.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Extensibility of trading license regime to cover cross border trade | <ul style="list-style-type: none"> <li>• In SA countries including India, the legal definition for trading may be amended to include cross border trade. This shall be done along with the addition of a new provision in legislative / regulatory framework that shall specify that authorization for indulging in cross border trade shall be granted to trading licensees subject to regulations, rules and procedures framed in this regard. <i>(The existing provision for import and export licenses available in some of the countries may not be effective for this purpose as these were included mostly to cater to cross border trade by generation companies, and import by the distribution utility instead of catering to transactions involving resale)</i></li> <li>• The entity that currently grants generation, transmission and distribution licences in the respective SA countries may be entrusted with the duty to grant trading licence, and the duty to grant authorization for indulging in cross border trade. The Government / Government designated agencies may be provided with the power to over-rule any proposal for grant of authorization for indulging in cross border trade to any entity.</li> <li>• In case of trading licenses which have been already granted, wherein the area of trading is defined in the licence as the territorial limits of the country, amendment of licence terms may be undertaken to allow cross border trade, subject to obtaining authorization for cross border trade.</li> </ul> |

| Key ingredients of trading licence regime                                             | Recommendations for South Asia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power market structure that allows for competition                                    | <ul style="list-style-type: none"> <li>Efforts shall be made to ensure progress in institutionalization of transmission open access in countries such as Afghanistan, Nepal, Maldives and Sri Lanka. Some sort of restructuring will also be needed in the case of vertical monopoly structure of power sector in Afghanistan.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Institution for grant of licenses, and for regulation and monitoring of the licensees | <ul style="list-style-type: none"> <li>The entity that currently grants generation, transmission and distribution licences in the respective South Asian countries may be entrusted with the duty to grant trading licence.</li> <li>For regulation and monitoring of licensees, the respective regulatory commissions / electricity authorities may be empowered. In countries such as Afghanistan where both regulatory commissions and electricity authorities are not present, the respective government department may be entrusted with this job as a transitional mechanism, till a separate regulatory body is set up.</li> </ul>                                                                                                                     |
| Segregation of licensees into different categories                                    | <ul style="list-style-type: none"> <li>In the interest of regulatory harmonization, the categorization of trading licensees based on volume limits as per the CERC Regulations in India may be adopted in the case of the other South Asian countries also.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Technical requirements for grant of licence                                           | <ul style="list-style-type: none"> <li>In the interest of regulatory harmonization, the technical qualification requirements as defined by CERC in India, may be adopted in the other South Asian countries also.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Financial requirements for grant of licence                                           | <ul style="list-style-type: none"> <li>The financial qualification requirements such as net worth may be linked to the trading volume as is the case with CERC in India. However, for obtaining authorization to indulge in cross border trade, stricter financial requirements may be prescribed, which may be determined separately for each of the South Asian countries.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                       |
| Frameworks governing grant, amendment, renewal or revocation of licenses              | <ul style="list-style-type: none"> <li>In the initial phase of cross border trade, authorization for indulging in cross border trade may be granted only to Category I and Category II licensees. This will be sufficient to allow entry of traders with firm portfolio of more than 57 MW.</li> <li>A minimum annual trading volume may also be prescribed in the case of trading licensees with authorization to indulge in cross border trade, so as to prevent the entry of non-serious traders, and traders with only short term profit goals.</li> <li>Detailed procedure for grant of trading licence, and their amendment, revocation and renewal may be specified, either as part of the regulations or as a separate guideline document.</li> </ul> |

| Key ingredients of trading licence regime | Recommendations for South Asia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Market monitoring arrangements            | <ul style="list-style-type: none"> <li>Trading licensees shall be legally mandated for provide information regarding their trading activities in a form and manner as the respective regulatory authority may prescribe.</li> <li>Market monitoring cells may be established within the regulatory commissions / other regulatory authorities who may be entrusted with the scrutiny of information submitted by the trading licensees, and detection of incomplete disclosure of information and instances of market abuse.</li> <li>A trading margin ceiling, similar to that prescribed by CERC in India, may be adopted in other countries also, with the ceiling value being determined separately for each country.</li> <li>The authority which grants trading licences shall be required to maintain a publically accessible licence register, which tracks information such as affiliates, penalties imposed by regulators if any, validity of licence, category of licence , authorizations granted for cross border trade etc.</li> <li>Regulatory provisions may be incorporated to consider the actions of trading licensees which are in line with prudent practices such as institutionalization of compliance programs, self-reporting and providing co-operation in investigations, in a favorable manner while determining the penalties.</li> </ul> |
| Funding                                   | <ul style="list-style-type: none"> <li>Licence application fees and annual licence fees may act as the key sources of funding, with the respective fees being determined by the regulatory authorities in the respective South Asian countries.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Dispute resolution mechanism              | <ul style="list-style-type: none"> <li>In case of disputes involving the entities of different countries, the same may be deliberated in the meeting of regional level regulator's association. After the investigations and deliberations, regulatory authorities may be allowed to issue their recommendations on actions to be taken against a cross border entity, which may be analyzed and granted / rejected by such regulatory authorities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Emergency provisions                      | <ul style="list-style-type: none"> <li>Provisions may be provided to curtail cross border trade to handle emergencies and unforeseen situations.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Other provisions                          | <ul style="list-style-type: none"> <li>Licensees may be required to furnish information required under the reporting and monitoring framework to be only in text converted to PDF format / workable spreadsheet models so as to ensure that the information is legible and that calculations can be repeated and verified.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## 7 Model framework and guidelines for trading licence regime in South Asia

### 7.1 Introduction

In the last few decades, Cross Border Electricity Trade (CBET) in South Asian region has gradually evolved from ad-hoc arrangements to a more well-established framework. For some countries, CBET has become a crucial revenue source, for some other countries, it has become a necessary tool to tide over energy shortages. CBET is viewed to be beneficial to SA region on account of the following aspects:

1. Availability of surplus generation and stranded assets in India, vis-à-vis power deficit in countries like Nepal and Bangladesh
2. Seasonal generation shortage in hydro power dependent countries like Nepal, which can be offset from other SA countries
3. Potential for large scale hydropower plants in countries like Bhutan and Nepal, coupled with demand for large scale clean power in India and other SA countries
4. Unavailability of adequate hydropower as a variable generation source for system balancing under high rates of RE penetration in India
5. Ease of access to isolated border towns from grids of neighboring countries rather than from domestic power grid

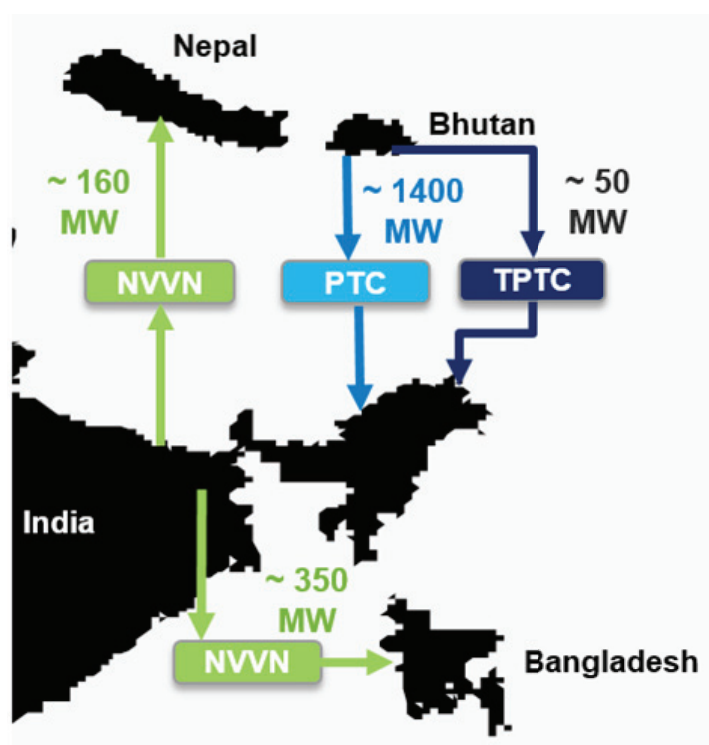
CBET in South Asia, especially in the BBIN sub-group (Bhutan, Bangladesh, India and Nepal), relies on power traders as intermediaries for arranging the trade.

**Figure 21: CBET in BBIN region through traders**

For example:

- Power from Chukka, Kurichu and Tala hydropower plants in Bhutan is exported to India through PTC India (erstwhile Power Trading Corporation of India).
- Power from Dagchu hydropower plant in Bhutan is exported to India through Tata Power Trading Company (TPTC)
- Nepal and Bangladesh import power from India through NTPC Vidyut Vyapar Nigam (NVVN)

Though trading licensees are seen to be playing a key role in CBET in South Asia, it may be noted that the traders are all Indian entities. Though the central role of India in CBET in SA region is a key reason, another factor behind this disparity is that none of the other countries in SA region has a well developed trading licence regime in their power markets.



\* Maps not to scale. Only illustrative.

Apart from their role in CBET, trading licensees have potential to assist in power market reforms by:

1. Accelerating the transition of single buyer markets to wholesale competition, which might also result in lower wholesale prices
2. Reducing the monopoly power of legacy utilities
3. Creating the requirement for an independent system operator
4. Act as a risk intermediary, thereby encouraging new investments in power generation

In this backdrop, it becomes important to work towards creating an enabling framework for trading licensees in SA countries other than India. As there is some degree of similarity in the basic power sector framework of the South Asian countries, a common framework and guidelines for the South Asian region can serve as a starting point for the process of institutionalization of power trading licence regime in South Asia.

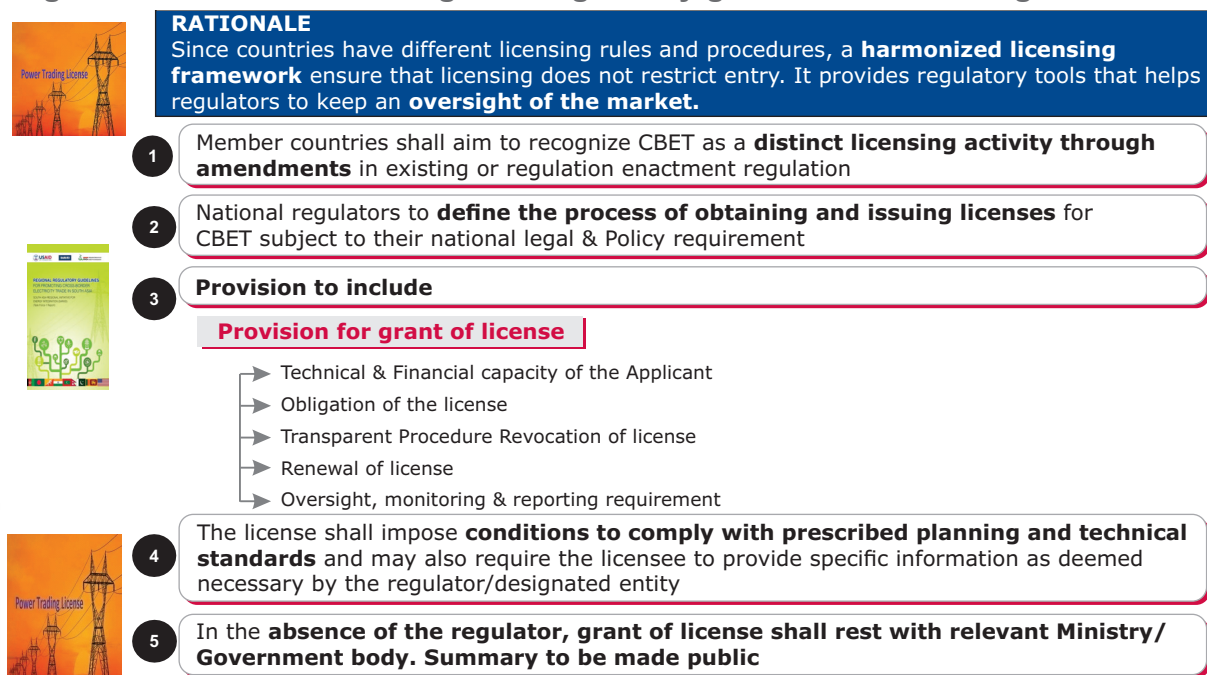
## 7.2 Context of framework and guidelines for trading licence regime

In 2014, the member countries of South Asian Association for Regional Cooperation (SAARC) came together to sign the SAARC Framework Agreement for Energy Cooperation (Electricity), which emphasized the need to promote regional power trade. The agreement noted that cross border electricity exchanges and trade among the SAARC Member States leads to optimal utilization of regional electricity generating resources, enhanced grid security, and electricity trade arising from diversity in peak demand and seasonal variations.

Meanwhile, USAID had initiated the SARI/EI program in 2000 aimed towards promoting energy security through energy cooperation and integration in the South Asian (SA) region. As part of the SARI/EI program, a Task Force-1 (TF1) was constituted comprising South Asian countries, to focus on “Coordination of policies, legal and regulatory frameworks’.

One of the key recommendation of TF-1 was that the South Asian countries should aim to recognize CBET as a distinct licensing activity, for which legal and regulatory frameworks were to be prepared in a harmonized manner.

**Figure 22: SARI/EI TF-1 - Regional regulatory guidelines for trading licensees<sup>14</sup>**



Source: IRADE, SARI/EI

<sup>14</sup> [http://irade.org/IRADe-SARI-EI-Regional%20Regulatory-Guidelines%20\(July%202015\)-.pdf](http://irade.org/IRADe-SARI-EI-Regional%20Regulatory-Guidelines%20(July%202015)-.pdf)

This framework and guidelines builds upon the recommendations of the task force, and carries them forward to a detailed action plan, which the respective South Asian countries can adopt for the operationalization of trading licence regime.

### **7.3 Purpose of framework and guidelines for trading licence regime**

Considering that power trade among South Asian countries is at a nascent stage, it might be worthwhile to have a model framework for trading licence regime, which can act as a reference point for the governments, policy makers and regulators to build a power trading licence regime in their respective power markets. As there is some degree of similarity in the basic power sector framework of the South Asian countries, a common framework and guidelines for cross border trade in the region can serve as a starting point for institutionalizing power trading licence regime in South Asia.

The model framework for trading licence regime and guidelines for grant of trading licence to initiate / advance power trading in SA countries and facilitate CBET in the SA region is expected to serve the following purposes:

**1. As a guidance document for regulators in power sector of South Asian countries on issues related to power trade licence regime.**

This framework and guidelines will be useful for lawmakers and regulatory commissions in South Asia in their efforts to introduce trading licensee as a participant in their power markets. The guidelines provide a standard for eligibility conditions, procedure for grant of licence, terms and conditions of licence etc.

**2. As a model document for discussions on trading licence regime in both international and domestic contexts**

The framework and guidelines provide a common basis for discussions on power trading in regional forums. It also allows the South Asian countries to agree upon a synchronized roadmap and action plan to operationalize trading licence regime in their respective geographies.

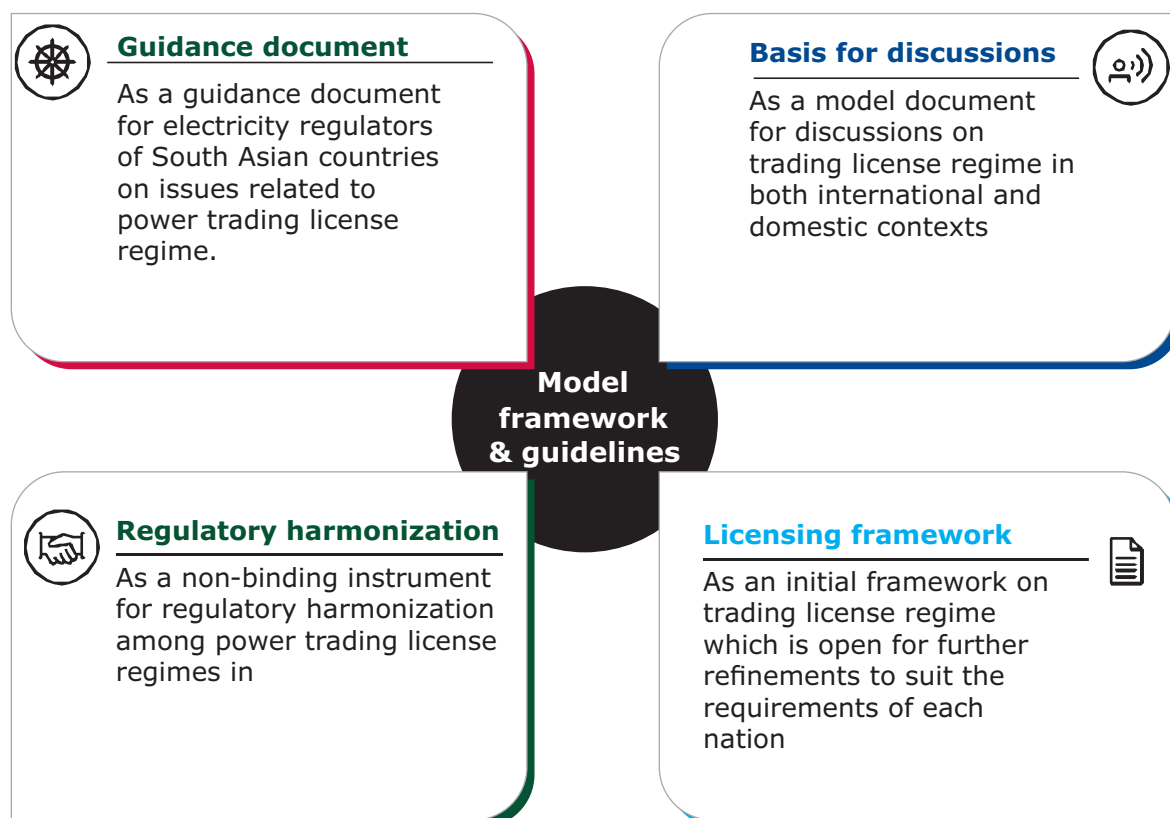
**3. As an initial framework on trading licence regime it is open for further refinements to suit the requirements of each nation**

This framework and guidelines present a trading licence arrangement, which could be broadly acceptable to most of the South Asian countries. The guidelines have been designed in such a way that member countries can quickly initiate a trading licence regime by adopting them, and thereafter can improve upon them through amendments, to tailor them more in line with local and situational requirements.

**4. As a non-binding instrument for regulatory harmonization among power trading licence regimes in South Asia**

By proposing a common framework for trading licensees, it is expected that the evolution of trading licence regime in South Asia will be taken up in a more harmonized manner. Presence / absence of legal, regulatory and operational inconsistencies are expected to play a key role when trading licensees of different countries interact in cross border trade.

**Figure 23: Purpose of model framework and guidelines**



The model framework and guidelines for trading licence regime in South Asia have been developed keeping in mind the following guiding principles:

**Table 19: Guiding principles for model framework and guidelines**

|                                                                 |                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Current scenario of trading licence regime in South Asia</b> | The present status of trading licence regimes in South Asia with respect to both domestic and cross border trade.                                                                                                                                              |
| <b>International Experience</b>                                 | Lessons from other countries and international power pools, such as South Africa, SAPP and SIEPAC                                                                                                                                                              |
| <b>Previous studies of IRADe</b>                                | SARI/EI task force 1's report on "Review and Analysis of Electricity Laws, Policies and Regulations of South Asia Countries (SAC) to recommend changes/amendments therein for promoting Cross Border Electricity Trade in SAC (SARI/EI-2014-01)" <sup>15</sup> |
| <b>SAARC Framework</b>                                          | The SAARC Framework Agreement for Energy Cooperation (Electricity), 2014                                                                                                                                                                                       |
| <b>India's guidelines for cross border trade</b>                | Guidelines for cross border trade issued by the Ministry of Power, Government of India, and the draft regulations on cross border trade published by CERC of India.                                                                                            |

<sup>15</sup> " [http://irade.org/IRADe-SARI-EI-Regional%20Regulatory-Guidelines%20\(July%202015\)-.pdf](http://irade.org/IRADe-SARI-EI-Regional%20Regulatory-Guidelines%20(July%202015)-.pdf) " and " [http://www.irade.org/TF-1%20Report\\_Suggested%20Changes\\_Amendments\\_in%20Electricity%20Laws,%20Regulations%20and%20Policies%20of%20SAC%20for%20Promoting%20CBET%20in%20SA%20Region-Rajiv.pdf](http://www.irade.org/TF-1%20Report_Suggested%20Changes_Amendments_in%20Electricity%20Laws,%20Regulations%20and%20Policies%20of%20SAC%20for%20Promoting%20CBET%20in%20SA%20Region-Rajiv.pdf) "

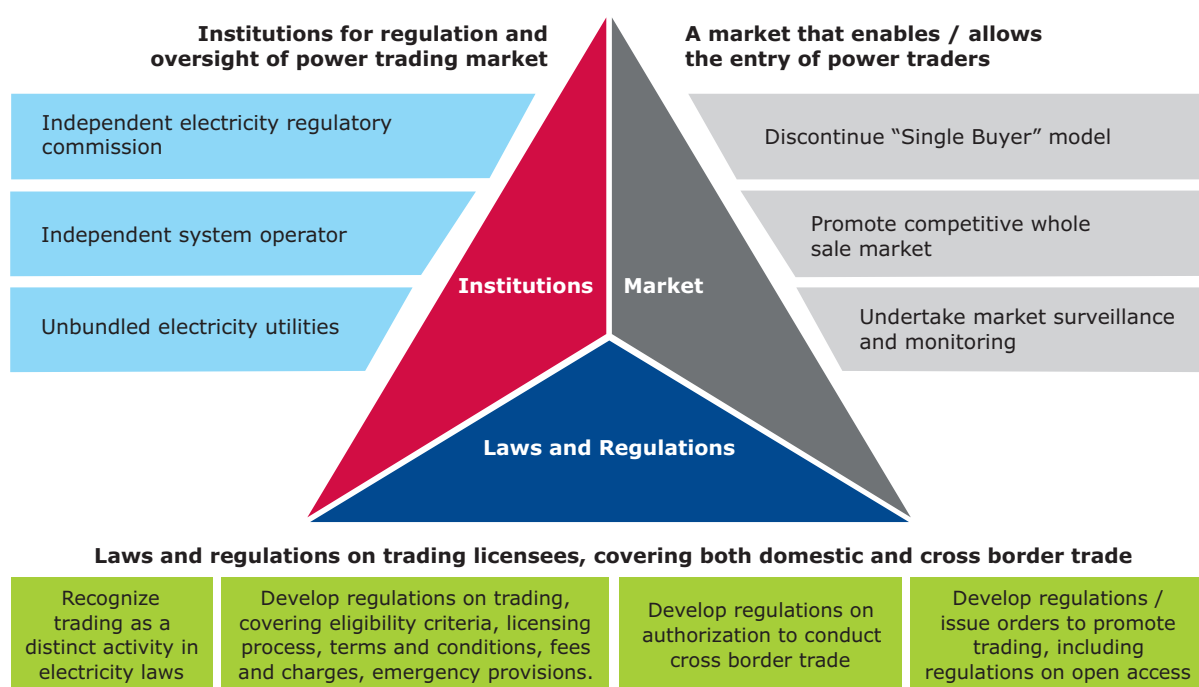
It is emphasized that the model framework and guidelines are suggestive in nature. Each country in the South Asia region is expected to develop the trading licence regime for their power markets based on multiple inputs, following due process of law.

## 7.4 Model framework

Based on the study of trading licence regimes in India, other countries and regional power pools, a framework with three basic elements is identified to form the basis for deriving guidelines for trading licence regime:

- **Laws and regulations** on trading licensees, covering both domestic and cross border trade
- **Institutions** for regulation and oversight of power trading market
- A **market** that enables / allows the entry of power traders

**Figure 24: Model framework for trading licence regime in South Asia**



### 7.4.1 Laws and Regulations

The trading licence regime requires corresponding legal and regulatory support to be in place. Legal support is required mainly in terms of defining trading as a distinct activity in the power market, to be undertaken only after obtaining license. In order to avoid any ambiguities, the legal framework allows the trading licensees to undertake cross border trade, subject to regulations framed in that regard.

The regulatory framework for trading licensees shall specify the licensing procedure, categories of licensees, eligibility requirements, terms and conditions of licence, fees and charges, monitoring and reporting framework, emergency provisions to control / curtail trading etc.

The regulatory framework for trading licensees to undertake cross border trade could be provided as part of the same regulations as that for domestic trade, or could be developed

separately. However, dual licensing may be avoided, and certain categories of trading licensees, if they meet certain additional eligibility requirements, shall be provided with “authorization to conduct cross border trade”.

The regulatory framework shall also strive to put in place enabling conditions for trading licensees, such as open access. Without non-discriminatory open access to the electricity network, the trading licensees will not be able to play any meaningful role in the power market.

#### 7.4.2 Institutions

The three key institutions crucial for trading licence regime are:

- An **independent regulatory commission** – for licensing, regulation, monitoring and dispute resolution
- An **independent system operator** - to ensure nondiscriminatory open access to electricity network
- **Unbundled electricity utilities** – as the presence of vertically integrated monopoly utilities prevent trading licensees from playing any meaningful role in the domestic power market

#### 7.4.3 Market

For effective participation of trading licensees, the power market should have transitioned from “single buyer” model (*wherein only the monopoly utility is allowed power purchase and retail supply*) to a competitive wholesale market (*wherein IPPs, traders etc. are allowed wholesale power sales*).

The power trading business is comparatively less regulated than other licensed businesses. In licensing regime traders discover electricity purchase and sale price through negotiations and market mechanisms. This leads to the requirement of market monitoring and oversight mechanisms that ensure that traders are not indulging in market price manipulation, and that trade is being conducted in a fair and competitive manner.

Once such a framework is in place, it is expected that the interaction between the basic elements of the framework will result in further development of the trading license regime, such as development of detailed procedures and the introduction of standardized trading products in electricity.

Before proceeding with the guidelines, the following key concepts are described in a quick and concise manner, to provide a conceptual understanding of the trading business:

### Key concepts of trading licence regime

- **Power trading**  
Power trading refers to the business of purchase and resale of electricity. Trading acts as a bridge, which facilitates commercial interactions between various category of electricity suppliers and consumers, with the trade itself being conducted through one or more than one traders.
- **Trading licensees**  
In regulated power markets, power trading is usually treated as a licensed activity. A trading licensee is an entity with legal sanction to engage in power trade. The licensing authority is typically an electricity regulatory commission, or in its absence, a Government department. The licensing authority prescribes the terms and conditions and obligations for the licensee, and maintains oversight over the licensee's trading activities.
- **Licensing procedure**  
Grant, amendment and revocation of trading licence needs to be done in a well-defined process, which promotes transparency. This includes defining the workflow for licensing, define eligibility requirements, publishing public notice on licence applications, inviting comments and objections from the public, conducting public hearing, communicating the final decisions, fixation of licence fees etc.
- **Terms and conditions of licence**  
The terms and conditions of licence specify the mandatory obligations and duties of trading licensees, failing which the licence may be revoked, or the licensees may be liable for penal action. The typical terms and conditions include maintaining the eligibility requirements, furnishing trading information and statistics in the monitoring and reporting formats shared by the regulatory commission, comply with any orders on trading margin, comply with any emergency provisions on curtailment / control of trading etc.
- **Ceiling on Trading margin**  
The maximum margin allowed in a trading transaction, which is the difference between final resale price and initial purchase price. The regulatory body may / may not choose to calculate and impose trading margin ceiling, in line with their regulatory policy and market scenario. Margin is calculated for each end-to-end sale and purchase transactions, and not separately for each trader involved in the transaction. Thus, even if multiple traders are involved in a sequential manner, the sum of margin of each of the traders shall be within the overall ceiling on trading margin. If specified by the regulatory authority.

## 7.5 Guidelines

Based on the guiding principles and the model framework, guidelines for the trading license regime are proposed, the summary of which is provided below.

**Table 20: Summary of guidelines for trading licence regime in South Asia**

| No. | Guideline                                                                               | Summary                                                                                                                                                                                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Operationalization of legal and regulatory framework for trading licensees              | <ul style="list-style-type: none"> <li>Introduce trading as a defined and allowed activity under statutory legislation.</li> <li>Empower the respective national level electricity regulators to exercise market oversight and price control in trading market through measures such as trading margin cap and emergency provisions.</li> </ul> |
| 2   | Extending / applying the trading licence framework in the context of cross border trade | <ul style="list-style-type: none"> <li>Introduce the concept of “authorization for cross border trade”, so that trading licensees can conduct cross border trade.</li> </ul>                                                                                                                                                                    |
| 3   | Categories of trading licensees and qualification criteria                              | <ul style="list-style-type: none"> <li>Categorization of trading licensees to be based on proposed annual trading volume.</li> <li>Authorization for cross border trade to be given initially to only traders falling in the highest category.</li> </ul>                                                                                       |
| 4   | Grant and revocation of trading licence                                                 | <ul style="list-style-type: none"> <li>Clearly define the procedures for issue, renewal, amendment and revocation of trading licences.</li> </ul>                                                                                                                                                                                               |
| 5   | Terms, conditions and obligations of trading licensees                                  | <ul style="list-style-type: none"> <li>Trading licensees to be made responsible for fair, transparent and competitive market operations and safe grid operation through terms and conditions and obligations specified in legal / regulatory framework.</li> </ul>                                                                              |
| 6   | Market development                                                                      | <ul style="list-style-type: none"> <li>Hurdles in the introduction and participation of power traders may be removed through legal / regulatory changes and institutional restructuring.</li> </ul>                                                                                                                                             |
| 7   | Encouraging regional mechanisms for co-ordination in CBET                               | <ul style="list-style-type: none"> <li>Ensuring co-operation and support in the operationalization of regional forums for collaboration in CBET</li> </ul>                                                                                                                                                                                      |

The detailed guidelines are as follows.

### Preamble

- i. These guidelines apply to trading licensees in the South Asian countries.
- ii. These may be applied either as a guidance document for developing a trading licence regime or for modifying the existing trading licence regime in South Asian countries.
- iii. These guidelines are non-binding in nature and are aimed to provide national governments of South Asian Countries (SAC) with a consistent set of principles for trading licence regime.
- iv. The guidelines deal only with the issues faced by the South Asian Countries in cross border electricity trade. These are not meant to be comprehensively dealing with all matters related to trading licence regime.
- v. The South Asian countries may utilize the existing regional forums such as SARI/EI, SAARC secretariat and regional regulatory bodies that may come up in the future such as the proposed South Asia Forum of Electricity Regulators (SAFER) to work towards enabling the guidelines and facilitating required changes to in the respective national regulatory frameworks.

## Guideline 1: Operationalization of legal and regulatory framework for trading licensees

**Context:** In SA countries, other than India and Bhutan, trading is not recognized as a distinct licensed activity in their respective electricity sector legislations. Even in case of Bhutan, there is no supporting regulatory legal framework relating to electricity trading.

There are multiple examples of countries providing a defined legal and regulatory framework for electricity trading, such as South Africa (Electricity Regulation Act 2006), El Salvador (General Electric Law 1996) and Guatemala (General Electric Law 1996). These countries have cross border trade within their region.

In the substantially regulated electricity markets of South Asia, it is important to have a defined legal and regulatory framework for trading activity so that the same may be put to use in the context of cross border electricity trade.

Without such framework, such as the existence of a definition of electricity trading and trading licensees in the legal framework, the trading business will not come under the legal and regulatory framework. Even rest of the power sector entities will not have comfort in transacting the business with trading entities that are not supported by the legal provisions. There will also be lack of clarity in terms of regulatory jurisdiction, if legal and regulatory backing for trading business is not provided.

Trading shall be introduced as a distinct licensed activity in the respective country's fundamental legislations on electricity sector.

Basic provisions regarding grant, amendment, revocation and renewal of licences, and the duties and obligations of licensees shall be incorporated either in the legislative amendments / through regulations, wherever such provisions are not present.

The legal framework may aid in providing predictability and may incorporate provisions such as a legally defined licence validity period, legally defined ceiling on penalties that can be imposed for contravention of licence terms, and a time limit for finalisation of trading licence applications after receipt of all clarifications and information.

Regulatory Commissions are appointed to regulate and monitor the trading market and the trading licensees. These agencies try to constitute separate market monitoring cells for regular market oversight. The legal framework should make it the duty of the market oversight agency to develop a well-defined market oversight procedure, which shall at the minimum include:

- Formats for regular reporting of transactions by the licensees

The licensees shall be made liable to file reports in pre-defined format regarding the volume, buyer, seller and trading margin related to each of their transactions.

This allows the regulatory commissions to ascertain that there is no abuse of market power and violation of any stipulations on trading margin by any of the licensees.

- Penalties for failure to file information within the prescribed time

In case any of the licensees continuously default in filing and publishing, the regulatory commission shall be empowered to impose commercial penalties. The amount of penalty may be determined by the individual regulatory commissions.

- Power to conduct investigations against a licensee / a group of licensees

The regulatory commission, including any officers to which the commission has delegated the powers, shall be empowered to conduct investigations against a licensee / group of licensees, including the right to access the office premises of the licensee, right to access and seize the records and documents maintained by the licensee, and the right to question officers of the licensee.

Such powers are required in the event any allegation of market abuse / regulatory violation against any of the licensees needs to be investigated.

- Incentives to licensees to institutionalize compliance programs and self-reporting (of violations)

The licensees shall be encouraged to institutionalize compliance programs and self-reporting, wherein if any violation of regulatory provisions are identified, there is an incentive for the licensees to honestly report it to the regulatory commission rather than trying to suppress it. This is typically done by awarding a slightly lower penalty, if the violation is identified through self-reporting rather than through investigations made by the regulatory commission.

The rationale behind such a scheme is that, without such an incentive, licensees may continue to suppress the adverse information, as there are no additional penalties for such suppression.

- Provision to make public, power trade transaction details up to a minimum level of detail
- While the entire report on transactions shall be filed with the regulatory commission, the report, excluding commercially sensitive information, shall also be hosted by the licensees on their websites. The licensees shall be required to host the information pertaining to the last 12 months in their websites.

This provision improves transparency and allows the other stakeholders in the sector to analyze and verify that there is no abuse of market power by the traders.

The legal framework shall clearly provide for emergency provisions for exceptional circumstances, wherein the Regulatory commission / Government can control / restrict the trading activities, including, but not limited to:

- Curtailment of trading transactions
- *Imposition of trading margin cap / ceiling (separately for domestic and cross border trade, with the margin ceiling for cross border trade set higher than that for domestic trade)*
- Temporary cap on market prices for purchase and resale of electricity

#### **Guideline 2: Extending / applying the trading licence framework in the context of cross border trade**

**Context:** In South Asia, even in the case of India, legal and regulatory framework for licensing for cross border trade is still evolving.

In Bhutan, there is a provision of import and export licensees. However, this provision caters to cross border trade by generation companies, and import by the distribution utility instead of catering to transactions involving resale.

The presence of a trading licence regime in the domestic market is not by itself a sufficient condition for allowing the trading licensees to undertake cross border trade. There are also choices to be considered, such as whether there shall be a separate license category for cross border trading licensees, or whether the national level trading licensees may be allowed to participate in cross border trade subject to authorization.

Without an explicit authorization process, there might be a scenario in which all traders are allowed CBET too, which shall not be the case. Trading licensees who are allowed to indulge in CBET shall be credit worthy, and shall have an established track record, so as to reduce the chances for disputes between entities of different countries. At the same time, having a separate licensing process for cross border trade will be a duplication of processes and wastage of time. Therefore a balanced framework for providing authorization for cross border trade needs to be evolved.

The legal definition for trading may be amended to include cross border trade. If this is not feasible, a separate provision may be added in the laws, to allow CBET by the trading licensees. This shall be done along with the addition of a new provision in legislative / regulatory framework that shall specify that authorization for cross border trade shall be granted to trading licensees subject to regulations, rules and procedures framed in this regard.

The entity that currently grants generation, transmission and distribution licences in the respective South Asian countries may be entrusted with the duty to grant trading licence, and the duty to grant authorization for indulging in cross border trade.

The government / government designated agencies may be provided with the power to over-rule any proposal for grant of authorization for indulging in cross border trade to any entity.

In case of trading licences which have been already granted, wherein the area of trading is defined in the licence as the territorial limits of the country, amendment of licence terms may be undertaken to allow cross border trade, subject to obtaining authorization for cross border trade.

In case of countries with no regulatory framework for trading licensees, they may be allowed a transitionary arrangement in which authorization for cross border trade can directly be given, subject to trading activities being limited to CBET, with no trading within the country.

### **Guideline 3: Categories of trading licensees and qualification criteria**

**Context:** Among the South Asian countries, only in case of India, a well-developed framework for trading licensees is available, which also specifies the different categories of trading licensees, based on the envisaged annual trading volume. The annual licence fee is also linked to the annual trading volume.

There is also the example of United States wherein traders are classified according to their market power.

Irrespective of the model being adopted, it is important that there shall be some segregation among the licensees, especially as the same financial and technical criteria cannot be imposed on all traders irrespective of their size, capability and trading volume.

The qualification criteria for trading licensees is another key decision point. In terms of technical criteria, a trader should have:

- ability to understand the market and operations of the system
- ability to conduct commercial transactions
- ability to communicate with the business partners, Appropriate Commission and the system operators

This translates to the availability of qualified technical personnel for conducting trading, and the availability of requisite software and hardware systems. Similarly, persons who have commercial knowledge of the market and financial accounting also need to be available.

The traders will also need to share information and communicate with utilities, SLDC, RLDC etc. This will require communication links to be set up.

In terms of financial qualification, the key concern is that unlike other electricity business, traders have very low asset base in comparison to their accounts payable and receivables. Therefore, financial qualification criteria needs to be set in such a way that there is no concern regarding the financial situation of the trader. This translates to the requirement that the trader should have sufficient capital employed to cover the credit and default risk.

An annual trading volume based categorization of licensees, as is the case with India, may be adopted, with only the highest category of trader being allowed to undertake cross border trade.

**Categorization of trading licensees followed in India\***

|              |                                  |    |
|--------------|----------------------------------|----|
| Category I   | No limit                         | 50 |
| Category II  | Not more than 1500 Million units | 15 |
| Category III | Not more than 500 Million units  | 5  |
| Category IV  | Not more than 100 Million units  | 1  |

\* This is provided merely as an illustration. Other South Asian countries may take a proportionately reduced scale of volume and network specification. The above values are for India's power market.

**In case of technical criteria, the following aspects may be prescribed:**

- Availability of qualified technical personnel for conducting trading

The licensee shall have at least two engineers with post-graduation in electrical engineering / power systems under its full time employment, with a minimum experience of ten years in power sector.

- Availability of qualified financial personnel for conducting trading

The licensee shall have at least two qualified Chartered Accountants and MBA professionals, with minimum experience of 5 years in the power sector, who can take care of the financial accounting and commercial aspects.

- Availability of software and hardware systems for trading

The licensee shall have web based portals for use by the buyers and sellers as part of trading operations and / or management information system.

The licensee shall have installed communication systems, if required under grid code / other relevant technical standards.

**In case of financial criteria, the following aspects may be prescribed:**

- Minimum net-worth criteria, based on annual trading volume
- Minimum 1:1 current ratio and liquidity ratio

The financial criteria may be calculated either with the latest audited financial accounts / based on special audited balance sheet prepared in the recent time period. The aim of financial criteria is to ensure that the traders remain strong and solvent, and capable to meet their payment commitments towards utilities, system operators, and sellers. For ascertaining the same, the capital employed by the traders is compared against their current liability and fixed liability.

The financial criteria may be kept at a higher level for obtaining authorization for cross border trade, such as 200% of the net-worth requirements of a Category I licensee.

**Notes:**

**Definition of net-worth, current ratio and liquidity ratio**

- “**net worth**” means aggregate value of the paid up equity capital and free reserves (excluding reserves created out of revaluation) reduced by the aggregate value of accumulated losses,

deferred expenditure (including miscellaneous expenses) not written off and loans and advances to the associates;

net worth = {paid up equity capital and free reserves (excluding reserves created out of revaluation)} – {accumulated losses + deferred expenditure (including miscellaneous expenses) not written off + loans and advances to the associates}

- “**liquidity ratio**” means the ratio between the liquid assets and current liabilities:

$$\text{Liquidity ratio} = \frac{\text{liquid assets}}{\text{current liabilities}} \quad \frac{\text{liquid assets}}{\text{current liabilities}}$$

where

- liquid assets include the current assets less inventory, and
  - current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;
- “**current ratio**” means ratio between the current assets and current liabilities:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \quad \frac{\text{current assets}}{\text{current liabilities}}$$

where

- current assets include cash or cash equivalent of money, accounts receivables, inventory, marketable securities, and pre-paid expenses, and
- current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;

### Definition of Special balance sheet

A special balance sheet is prepared for a date, which falls within 60 days prior to the submission of application for grant of trading licence. This is required to be furnished, with certification by the applicant’s Chartered Accountant as the basis for financial qualification.

### Guideline 4: Grant and revocation of trading licence

**Context:** Among the South Asian countries, a well-developed framework for trading licensees is available only in case of India, which also specifies the procedure for grant and revocation of trading licence.

International experience shows that notifying a properly defined process for scrutiny of trading licence applications, identifying the key stakeholders and listing key timelines and milestones will enable a streamlined process for grant / amendment / revocation of licences. Apart from India, this aspect has also been witnessed in the case of power trading framework in South Africa, United States of America, and Central American Interconnection.

The procedure typically consists of receiving application for grant of licence, initial scrutiny of licence application, inviting comments from public and other stakeholders, demanding additional information and explanations from the applicant, detailed scrutiny of application in terms of eligibility requirement, and decision to approve / deny the request for grant of licence.

**Regulatory framework for grant of license shall at the minimum consist of the following.**

|                                                                                              |                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification of the authority which will scrutinize licence application and grant licences | Either the Regulatory Commission or in its absence, the relevant Ministry / Government Department may be identified as the licensing authority.                                                                                                                                   |
| Application procedure for grant of licence                                                   | Sample application form provided in Annexure 2<br>Copies of relevant documents such as that of company registration, annual audited accounts etc. may also be collected.<br>Maximum timeline for processing of application at various stages to be specified.                     |
| Licence Application Fee                                                                      | May be determined by the Regulatory Commission or in its absence the relevant Ministry / Government Department.                                                                                                                                                                   |
| Publication of application for comments and objections                                       | Minimum number of newspapers and websites to publish summary, sample summary format, online publication of full set of documents, time for receipt of comments, time for furnishing reply by the applicant to be specified                                                        |
| Scrutiny of application for grant of licence                                                 | Timeline for scrutiny to be specified.<br>The authority conducting scrutiny may be empowered to ask for additional information and additional documents, if necessary.<br>A public hearing may be provided before the final decision to approve / reject the license application. |
| Requirements for grant of licence                                                            | Provided in Guideline 3                                                                                                                                                                                                                                                           |
| License format                                                                               | Sample provided in Annexure 2                                                                                                                                                                                                                                                     |
| Other clauses                                                                                | Clearance from relevant ministries in case the applicant company has foreign ownership, may be made necessary.                                                                                                                                                                    |

For renewal and amendment of licence, the same clauses with minor changes may be made applicable.

Regulatory framework for amendment / revocation of licence shall at the minimum consist of the following.

| Clause                                                                                             | Description                                                                                                                     |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Procedure to apply for revocation (initiated by licensee)                                          | Similar to procedure for grant of licence                                                                                       |
| Procedure to initiate revocation proceedings by the regulator (suo-motu / based on any complaints) | Similar to procedure for grant of licence, except for the fact that there will be no separate application made by the licensee. |
| Publication of revocation proposal for comments and objections                                     | Similar to procedure for grant of licence                                                                                       |

| Clause                               | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preconditions for licence revocation | <p>In case the revocation is requested by the applicant, the same may be allowed only after existing dues are cleared, and the applicant gives a sworn affidavit that it has terminated all its future commitments / contracts for trading.</p> <p>In case the revocation is not requested by the applicant, transition period after which revocation will come into effect may be specified, if required.</p> |

### Guideline 5: Terms, conditions and obligations of trading licensees

**Context:** Among the South Asian countries, a well-developed framework for trading licensees is available only in case of India, which also specifies terms, conditions and obligations of trading licensees.

Meanwhile there are examples of South Africa and United States wherein the legal and regulatory framework specifies the power of regulatory commission to specify wide ranging terms and conditions, and a well-defined compliance regime for the traders to adhere to.

The terms, conditions and obligations become important, as the regulatory commissions cannot be expected to continuously monitor the activities of the trading licensees. Under such scenarios, the terms, conditions and obligations become the guiding criteria for licensees to follow, and the reference criteria for regulatory commissions to check against the performance of the trading licensees.

The terms, conditions and obligations of the trading licensees are also important for the role they play in influencing the market price and as a risk intermediary to build operational safeguards. Also, as the trading price is unregulated, regulatory authorities require trading licensees to furnish regular reports. This is ensured through obligation to continue conducting trading and to maintain the eligibility requirements for the particular category of trading licence.

The terms and conditions also require the regulatory authorities to assume more powers under emergency situations, including inspecting the records of the licensee, controlling trading prices and trading margin, and giving directions to control / curtail trading activities. The importance of such emergency provisions were well established during events such as the California energy crisis of 2000 - 2001.

The terms and conditions for trading licensees shall at the minimum consist of:

- Validity of licence  
Typically 25 years or more.
- Geographical coverage  
Typically common to the geographical jurisdiction of the regulatory commission.
- Compliance requirements for maintaining the validity of licence  
Usually linked to the terms and conditions and obligations.

The obligations for trading licensees shall at the minimum consist of:

- Payment of annual licence fee
- Payment of open access fees, charges and security deposits as required under open access regulations

- Regular reporting of transactions in the prescribed format
- Comply with price control and other emergency provisions, if any (curtailment of trading transactions, cap on trading margin etc.)
- Co-operate with the regulatory commissions during investigations
- Comply with planning and technical codes.
- Furnishing of information, as and when demanded by the regulatory commissions

The annual licence fee for each category of licensee may be specified based on a percentage of a market reflective index, for example, 1% of anticipated trade turnover, at previous years' average per unit sale price of trading licensees. (The average sale price is expected to be available from the regular reporting formats submitted by the licensees to the regulatory authority):

**Table 21: Possible model for fixation of trading license fees**

| Category of the Trading Licence                  | Volume of electricity proposed to be traded in a year * | Annual trading license fee                                         |
|--------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------|
| Category I with cross border trade authorization | No limit                                                | 2% * 200 MU * Per unit average trading sale price of previous year |
| Category I                                       | No limit                                                | 1% * 200 MU * Per unit average trading sale price of previous year |
| Category II                                      | Not more than 150 Million units                         | 1% * 150 MU * Per unit average trading sale price of previous year |
| Category III                                     | Not more than 50 Million units                          | 1% * 50 MU * Per unit average trading sale price of previous year  |
| Category IV                                      | Not more than 10 Million units                          | 1% * 10 MU * Per unit average trading sale price of previous year  |

\* Volume limits are indicative.

Each country may set the limits in line with their estimated market size for trading.

As can be seen above, it is important to fix a higher level of charges for the licensees with authorization for cross border trade considering the additional costs for regulatory harmonization and the probable additional margins achieved on account of cross border trade.

In addition, the following best practices from other countries may also be adopted as part of terms, conditions and obligations:

- Trading licensees may be encouraged to undertake prudent practices such as institutionalization of compliance programs, and providing options for self-reporting. Such encouragement may be provided by specifying discounts on penalties, which would have been incurred otherwise, or in any other manner as the respective regulatory may deem to be fit.
- Licensees may be required to furnish information required under the reporting and monitoring framework to be only in text converted to PDF format / workable spreadsheet models so as to ensure that the information is legible and that calculations can be repeated and verified.

## Guideline 6: Market development

**Context:** Power market should have progressed from vertical monopoly / single buyer model to wholesale competition, allowing trading licensees to source power from IPPs and other sources for re-sale. The necessity of this condition is evidenced especially in the case of South Africa, wherein an executive order mandating all purchases to be done by the Government owned monopoly – Eskom is stifling the growth of trading industry.

Enabling market conditions for power traders are not present in many of the South Asian countries. Transmission open access, which is a necessary condition for trading market, has not yet evolved in Afghanistan, Nepal, Maldives and Sri Lanka. In the absence of transmission open access, trading licensees are effectively prevented from market participation as access to the transmission network is denied for trading.

The presence of vertically integrated monopoly in Afghanistan is expected to be another barrier in the institutionalization of trading licence regime. The vertically integrated monopolies typically have a conflict of interest when dealing with trading licensees, especially with regard to allowing transmission open access and conducting system operation. To ensure that the monopoly utilities do not act in a biased manner against market participants such as trading licensees, it is important to have at least the transmission and system operation functions unbundled from the vertically integrated utility.

The power market structure shall not be solely reliant on single buyer model / vertical monopoly. Third party entities such as traders shall be allowed to purchase and resell energy.

Countries in the South Asia region shall evolve and operationalize transmission open access in such a way that trading licensees can make use of the same set up for domestic and cross border power trade. Institutional, legal, regulatory and operational framework for open access will need to be put in place.

## Guideline 7: Encouraging regional mechanisms for co-ordination in CBET

**Context:** In South Asia, currently there is no established forum of electricity regulators at the regional level. In fact, in the energy sector, there are few regional bodies such as SAARC Energy Secretariat.

In regional power pools, the presence of regional regulator makes it easier to undertake efforts for regulatory harmonization and indulge in dispute resolution related to cross-border trade. This has been proved in the case of regional level regulatory forums such as CRIE of the Central American Interconnection System and RERA of the South African Power Pool.

Considering the different levels of maturity of the legal and regulatory framework for trading licensees in South Asia, it is important to have a similar regional regulatory body. For example, if one country were to bring a regulation on CBET, the presence of a regional forum would provide a platform for the rest of the regional entities to provide their views as such regulations impact other countries also.

In the South Asian context, especially considering the political context, a regional regulatory forum of national electricity regulatory will be more preferred than a separate, new regional entity. Until a new body is set up, co-ordination efforts under existing forums and periodic meetings may be undertaken.

To enable smooth functioning of cross border trade through trading licensees, regular co-ordination at regional level may be required, with regard to:

- Making efforts for Regulatory harmonization
- Providing a forum for consultations to evolve policies and model regulations
- Supporting the efforts for improvement in competition and choice

For these purposes, there may be efforts in the future for constitution of various relevant forums of regulators, system operators etc. at the regional level. As such forums are crucial for CBET, the South Asian countries need to cooperate for setting up working regional forums for collaboration in CBET.

Until permanent forums are set-up, transitional arrangements may be adopted such as annual meeting of national level regulatory commissions of SAC.

A detailed explanatory memorandum to these guidelines are provided in Annexure I.

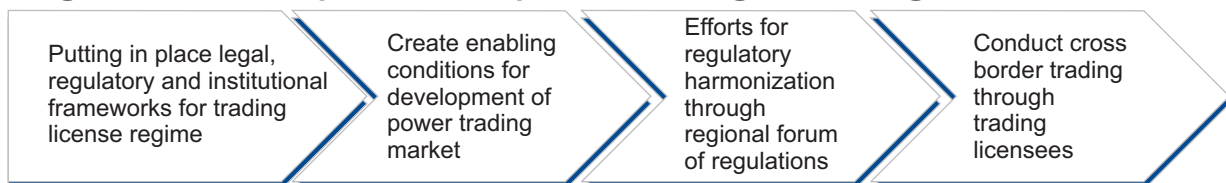
Sample formats for license application and other documents are provided in Annexure II.

## 7.6 Roadmap and action plan

### 7.6.1 Broad roadmap and action plan

It does not seem feasible to complete the institutionalization and operationalization of trading licence regime in South Asian countries at the same time, as different countries are at different levels with respect to the trading licence regimes and market development. Therefore the following roadmap is proposed, which may be further refined by the respective countries.

**Figure 25: Roadmap and action plan for trading license regime in South Asia**



#### Putting in place legal, regulatory and institutional frameworks

The countries may set up the legal, regulatory and institutional frameworks required for trading in a gradual manner, including:

1. Make provision in laws, identifying trading as a distinct and licensed activity
2. Define the regulatory authority for trading
3. Notify regulations for trading licensees, including the requirements for obtaining authorization for cross border trade

As amendment of laws could take time, subject to legal feasibility, option of commencement of trading through regulatory changes may also be explored. Guidelines 1 – 5 deal with these aspects. A country wise action plan is explained in more detail in 7.6.3.

#### Create enabling conditions for development of power trading market

As explained in Guideline 6, for trading to be effective, hurdles in market development will have to be removed, including:

- Transition from “single buyer” model to wholesale competition
- Creation of independent system operator
- Unbundling of legacy monopoly utilities

In case the countries are reluctant to introduce reforms in domestic market including unbundling of integrated utilities, but are keen to explore cross border trade opportunities through trading licensees, they may choose to limit their reforms to having an independent system operator, and allowing trading licensees to undertake purchase and resale for cross border electricity transactions.

### **Efforts for regulatory harmonization through regional forums**

As the countries set up regulatory frameworks for trading, efforts may be made to have such frameworks developed in a harmonized manner in the South Asian region. This would require periodic interactions at regional level, through existing and newly constituted forums, as described in detail in Guideline 7. Some of the areas where the role of regulatory harmonization is important are:

1. Allowing trading licensees set up in other countries to undertake trading transactions with their domestic trading licensees
2. Planning for long term market reforms such as wheeling of power through more than two countries
3. Sharing of market information to ensure that there is no market manipulation by the licensees

### **Conduct cross border trade through trading licensees**

Once the legal, regulatory and institutional mechanisms are in place, and the market is restructured to allow a meaningful role for the traders, trading activity can be commenced, in both domestic and cross border contexts.

However, it may be noted that the roadmap is not perfectly sequential with respect to the South Asia region, as countries that have already completed some of the stages above, can start with the implementation of subsequent stages. Also, even without the establishment of regional forum, cross border trade can be conducted through Government to Government agreements and treaties.

## **7.6.2 Transitional mechanisms for institutional framework**

The regulatory commission is the key institution in each of the countries with regard to operationalization of trading licence regime. However, in case of the following countries, independent regulatory commission at the national level has not yet been set-up. In these countries, the alternate government bodies that may be entrusted with the regulatory functions with regard to trading licence regimes are listed below.

**Table 22: Transitional institutions for regulation of trading licensees**

| Country     | Institution                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------|
| Nepal       | Department of Electricity Development (along with the regulatory commission once it is set up) * |
| Afghanistan | Ministry of Energy and Water                                                                     |

However, in the medium term, the focus of these countries shall also shift towards setting up a separate independent regulatory commission with statutory powers.

In other countries, the existing regulatory bodies may take over the duties of sanctioning trading licence and regulating the licensees.

**Table 23: Institutions for regulation of trading licensees**

| Country    | Institution                                          |
|------------|------------------------------------------------------|
| India      | Central Electricity Regulatory Commission            |
| Bangladesh | Bangladesh Energy Regulatory Commission (BERC)       |
| Bhutan     | Bhutan Electricity Authority (BEA)                   |
| Maldives   | Maldives Energy Authority                            |
| Pakistan   | National Electric Power Regulatory Authority (NEPRA) |
| Sri Lanka  | Public Utilities Commission of Sri Lanka (PUCSL)     |

\* In Nepal, the regulatory commission has not yet been constituted under the recently passed Electricity Regulatory Commission Act, 2017. However, even the new Act does not grant any licensing powers to the regulatory commission. Therefore, for the short to medium term, there may be dual institutional jurisdiction, with the licensing being overseen by the Department of Electricity Development, and the regulation and monitoring of licensees being undertaken by the regulatory commission.

### 7.6.3 Country-wise action plan

The country wise action plan for short (within 6 months), medium (6 months – 2 years) and long term (beyond 2 years) are discussed below. The broad idea is to initiate the process through executive / legislative actions in the short term, develop institutions in the medium term, and to strengthen the framework in the long term.

**Table 24: Countrywise Action Plan**

| Country     | Short Term                                                                                                                                                                                                                                                          | Medium Term                                                                                                                                                                                                                                                                                                    | Long Term                                                                                                                                                                                                                              |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Afghanistan | <ul style="list-style-type: none"> <li>Amend the Power Service Regulation Act 2016 to introduce trading as a separate licensed activity, and to specify requirements under which licensed traders may be allowed to indulge in cross border trade</li> </ul>        | <ul style="list-style-type: none"> <li>Set up Afghanistan Energy Services Regulatory Authority</li> <li>Support the creation of a Govt. promoted trading entity</li> <li>Conduct cross border trade through trading licensees</li> <li>Set up the regulatory framework for transmission open access</li> </ul> | <ul style="list-style-type: none"> <li>Undertake industry restructuring (such as functional unbundling of DABS) to encourage private sector participation</li> <li>Support the creation of privately owned trading entities</li> </ul> |
| Bangladesh  | <ul style="list-style-type: none"> <li>Amend the Electricity Act 1910 to introduce trading as a distinct licensed activity</li> <li>Issue regulations governing trading licensees, including conditions for authorization to conduct cross border trade.</li> </ul> | <ul style="list-style-type: none"> <li>Support the creation of a Govt. promoted trading entity</li> <li>Support the creation of privately owned trading entities</li> <li>Conduct cross border trade through trading licensees</li> </ul>                                                                      | <ul style="list-style-type: none"> <li>Modification of legal and regulatory framework based on operational feedback</li> <li>Restructuring of BPDB to make the market more competitive</li> </ul>                                      |

| Country  | Short Term                                                                                                                                                                                                                                                                             | Medium Term                                                                                                                                                                                                                                                                                                     | Long Term                                                                                                                                                                                        |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bhutan   | <ul style="list-style-type: none"> <li>Issue regulations governing trading licensees to support the provisions of Electricity Act, concerning license for trading</li> <li>Issue regulations governing authorization for trading licensees to indulge in cross border trade</li> </ul> | <ul style="list-style-type: none"> <li>Support the creation of a Govt. promoted trading entity</li> <li>Support the creation of privately owned trading entities</li> <li>Conduct cross border trade through trading licensees</li> </ul>                                                                       | <ul style="list-style-type: none"> <li>Modification of legal and regulatory framework based on operational feedback</li> <li>Restructuring of BPC to make the market more competitive</li> </ul> |
| India    | <ul style="list-style-type: none"> <li>Modification of existing CBET guidelines to support a holistic framework for trading licensees (Explained in chapter 8)</li> </ul>                                                                                                              | <ul style="list-style-type: none"> <li>Modification of CBET Regulations to support a holistic framework for trading licensees</li> </ul>                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Modification of legal and regulatory framework based on operational feedback</li> </ul>                                                                   |
| Maldives | <ul style="list-style-type: none"> <li>Nil</li> </ul>                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Amend the Electricity Regulations, 2012 to introduce trading as a separate licensed activity along with supporting provisions</li> <li>Set up the regulatory framework for transmission open access</li> </ul>                                                           | <ul style="list-style-type: none"> <li>Create / enhance interconnection between islands, wherever possible</li> </ul>                                                                            |
| Nepal    | <ul style="list-style-type: none"> <li>Set up Nepal Electricity Regulatory Commission (NERC)</li> <li>Issue regulations for grant of license and regulation of licensees</li> <li>Issue regulations for allowing trading licensees to undertake cross border trade</li> </ul>          | <ul style="list-style-type: none"> <li>Support the creation of a Govt. promoted trading entity</li> <li>Support the creation of privately owned trading entities</li> <li>Set up the regulatory framework for transmission open access</li> <li>Conduct cross border trade through trading licensees</li> </ul> | <ul style="list-style-type: none"> <li>Modification of legal and regulatory framework based on operational feedback</li> </ul>                                                                   |

| Country                   | Short Term                                                                                                                                                                                                                                                                                                      | Medium Term                                                                                                                                                                                                                                                                                                              | Long Term                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pakistan                  | <ul style="list-style-type: none"> <li>Amend the Electric Power Act 1997, to introduce trading as a distinct licensed activity</li> <li>Issue regulations for grant of license and regulation of licensees</li> <li>Issue regulations for allowing trading licensees to undertake cross border trade</li> </ul> | <ul style="list-style-type: none"> <li>Support the creation of a Govt. promoted trading entity</li> <li>Support the creation of privately owned trading entities</li> <li>Conduct cross border trade through trading licensees</li> </ul>                                                                                | <ul style="list-style-type: none"> <li>§ Modification of legal and regulatory framework based on operational feedback</li> </ul>                                                                                                                                                                      |
| Sri Lanka                 | <ul style="list-style-type: none"> <li>Amend the Electricity Act 2009, to introduce trading as a distinct licensed activity</li> <li>Issue regulations for grant of license and regulation of licensees</li> <li>Issue regulations for allowing trading licensees to undertake cross border trade</li> </ul>    | <ul style="list-style-type: none"> <li>Support the creation of a Govt. promoted trading entity</li> <li>Support the creation of privately owned trading entities</li> <li>Set up the regulatory framework for transmission open access</li> </ul>                                                                        | <ul style="list-style-type: none"> <li>Implement physical infrastructure for electricity transfer with India</li> <li>Conduct cross border trade through trading licensees</li> <li>Modification of legal and regulatory framework based on operational feedback</li> </ul>                           |
| All South Asian Countries | <ul style="list-style-type: none"> <li>Initiate discussions under existing regional forums for regional framework on CBET through trading licensees</li> <li>Allowing trading licensees set up in other countries to undertake cross border trading transactions with domestic trading licensees</li> </ul>     | <ul style="list-style-type: none"> <li>Support the creation of new institutions such as South Asia Forum of Regulators (SAFER)</li> <li>Support efforts for regulatory harmonization at regional level</li> <li>Sharing of market information to ensure that there is no market manipulation by the licensees</li> </ul> | <ul style="list-style-type: none"> <li>Explore possibilities for setting up regional power exchange, expanding electricity trade with South East Asian countries.</li> <li>Explore the possibilities of long term market reforms such as wheeling of power through more than two countries</li> </ul> |

Though these have been developed based on study of the existing framework, international best practices and the framework proposed in this report, the respective countries may modify it further, as per their requirements, as long as it is in line with the broad roadmap discussed in section 7.6.1

## 8 India's CBET Regulations

Ministry of Power, Government of India, notified the “Guidelines on Cross Border Trade of Electricity” on December 2016. As per Ministry of Power, the guidelines were prepared in order to facilitate and promote cross border trade of electricity with greater transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perception of regulatory risks.

Later, the Ministry of Power also appointed Member (Power Systems) of the Central Electricity Authority as the “Designated Authority” under the guidelines. The “Designated Authority” shall facilitate the process of approval and laying down the procedure for cross border transaction and trade in electricity.

In line with the Ministry's guidelines, CERC notified the draft of Regulations on Cross Border Trade of Electricity in February 2017. A review of the proposed CBET framework of India reveals the following aspects, which aid / support the development of framework and guidelines for trading licence regime for promotion of CBET in the South Asian countries:

**Table 25: Merits of the CBET guidelines and regulations**

|   |                                                                                                                                                                                                          |                                                                                                                                                                                                         |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Actions taken for cross border trade with neighboring countries shall continue to be in place till the expiry of existing contract [GoI – Guideline – 1.4]                                               | Provides assurance to the legacy contracts for CBET that they will continue to be valid, even if such contracts are not in line with the new guideline.                                                 |
| 1 | Participating entities declared as eligible to undertake cross border trade through Indian power exchanges, subject to approval from the “Designated Authority” [GoI – Guideline – 7.1]                  | Allows entities outside India to participate in India's competitive market for wholesale electricity.                                                                                                   |
| 3 | Disputes involving entities of separate countries may be settled through Singapore International Arbitration Centre or as may be mutually agreed by the participating entities. [GoI – Guideline – 10.2] | Allows international arbitration instead of limiting jurisdiction within Indian judicial system.                                                                                                        |
| 4 | Member (Power Systems), CEA identified as the “Designated Authority” to co-ordinate with nodal agencies of neighboring countries on CBET [GoI – Guideline – 5.1, GoI – 14/1/2016-Trans (Vol II) - 3]     | Removes ambiguity on the nodal agency for coordination on CBET in India                                                                                                                                 |
| 5 | Institutional framework for CBET [CERC – Draft Regulations – 6(2)]                                                                                                                                       | The concept of Settlement Nodal Agency provides clarity that there shall be a regional body that will be able to undertake energy settlement and other commercial matters related to cross border trade |

However, a few areas of concern remain, with regard to the divergence in the proposed CBET framework of India, and the framework for trading license regime in South Asian countries proposed under this report:

**Table 26: Issues of concern in India's guidelines and regulations on CBET**

|   |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>Eligibility criteria for participating applicant<br/> <i>[Gol – Guideline – 5.2.1<br/> CERC – Draft Regulations – 7]</i></p>                                                                                                         | <p>Import from trading licensees to India under one time approval is allowed only if at least 51% of ownership of such licensees are with Indian entities. This effectively blocks the way for Governments of countries such as Nepal and Bhutan to constitute Govt. owned trading licensees which would have been able to aggregate the power from multiple projects and sell it to India.</p> <p>Even if import is allowed from trading licensees of neighboring countries, the sources of power shall also comply with the requirements of Indian ownership or foreign Government ownership. Therefore generation projects owned by non-Indian private entities in other South Asian countries will not be able to export power to India even through trading licensees as an intermediary.</p> <p>Export of electricity under one-time approval is allowed only in case of distribution licensees and PSUs. However, this effectively prevents even existing trading licensees such as PTC India entering into new contracts for export of power, as it is not a PSU in the ideal sense.</p> | <p>The ownership criteria for trading licensees may be removed in those cases where the licensees are under regulatory jurisdiction of the respective countries in which they are set up. This should provide a comfort to India, as it will be able to recommend penal action against trading licensees of other countries through the respective regulatory commissions, if required.</p> <p>In case of import of power to India through trading licensees, the initial source of power need not be ascertained, as the trader is also an aggregator, and need not necessarily reveal the supply source.</p> <p>The one time approval for export of electricity from India may be extended to all trading licensees, subject to regulatory commission being allowed to curtail cross border trade in case of domestic energy shortages.</p> |
| 2 | <p>Any change in the equity pattern of the participating entities shall be intimated to Designated Authority and fresh approval shall be obtained.<br/> <i>[Gol – Guideline – 5.2.3]</i></p>                                            | <p>Without a threshold / allowable margin for change in equity pattern, the guidelines may result in unnecessary delays, waiting for the approval from Designated Authority.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Fresh approval may be made mandatory for only those changes in equity pattern that result in an effective change in ownership.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3 | <p>Tariff for import of electricity by Indian entities (including traders) may be determined through competitive bidding or through power exchanges.<br/> <i>[Gol – Guideline – 6.2(i), 7<br/> CERC – Draft Regulations – 4(2)]</i></p> | <p>This restriction prevents trading licensees to offer bilaterally negotiated tariff even for the bulk consumers in India who shall ideally not be bound by any requirement of competitive bidding.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>This restriction may be waived off in the case of import of electricity by trading licensees for the use of open access consumers in India, who are not bound by competitive procurement requirement</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Notwithstanding these above issues of concerns, it may be reiterated that CBET is a gradually evolving mechanism/process as far as South Asia is concerned. The guidelines of the Government of India and proposed regulations of CERC are open to changes, based on operational feedback from the existing mechanism. Therefore, interactions with statutory bodies such as the Ministry of Power, Central Electricity Authority and the Central Electricity Regulatory Commission in India may be continued in the interest of development of a fair trading licence regime for the promotion of CBET among the South Asian countries.

## 9 Annexure I – Explanatory memorandum to model guidelines

### Guideline 1: Operationalization of legal and regulatory framework for trading licensees

#### A. Current practice in South Asia

Only in case of India, a well-developed legal and regulatory framework for trading licensees are available. In Bhutan, trading licensee is defined under the Electricity Act of Bhutan, 2001. However, there is no supporting regulatory framework for the legal provisions relating to trading. The legal and regulatory framework for electricity in rest of the South Asian nations does not refer to trading as a distinct licensed activity.

#### B. International Experience

Electricity trading, and its licensing / registration, and subsequent regulation may be defined as part of statutory legislation so as to institutionalize a well-defined and predictable trading license regime. This is the case with South Africa (Electricity Regulation Act 2006), El Salvador (General Electric Law 1996) and Guatemala (General Electric Law 1996).

In almost all the countries, Regulatory commissions are appointed as the institution for receiving, analyzing and approving the applications for grant of license / registration / authorization for undertaking trading, and for the subsequent regulation and monitoring of trading activity. (Example: NERSA in South Africa, FERC in United States, SIGET in El Salvador).

The Regulatory commissions are also typically entrusted with market monitoring (United States of America – Online filing of information through FERC's systems) and maintenance of "agent register" / "trading licensee register". (Agent register maintained by CRIE under the provisions of Regional Energy Market Regulations)

There shall also be emergency provisions that empower regulatory agencies / government entities to curtail trading activities, which can prove useful in crisis situations. (Section 202 of Federal Power Act, as utilized by the Department of Energy, USA in events such as the California energy crisis, Section 11 of Electricity Act in India)

#### C. Relevance of the guideline

In the substantially regulated electricity markets of South Asia, it is important to have a defined legal and regulatory framework for trading activity, so that they same may be put to use in the context of cross border trade also. Without such framework, such as the existence of a definition of electricity trading and trading licensees in the legal framework, the trading business will not come under the legal and regulatory framework. Even rest of the power sector entities will not have any comfort in transacting business with trading entities that are not supported by the legal provisions. There will also be lack of clarity in terms of regulatory jurisdiction, if legal and regulatory backing for trading business is not provided.

#### D. Recommendations for South Asia

Trading shall be introduced as a distinct licensed activity in the respective country's fundamental legislations on electricity sector.

Basic provisions regarding grant, amendment, revocation and renewal of licenses, and the duties and obligations of licensees shall be incorporated either in the legislative amendments / through regulations, wherever such provisions are not present.

The legal framework may aid in providing predictability and may incorporate provisions such as a legally defined license validity period, legally defined ceiling on penalties that can be

imposed for contravention of license terms, and a time limit for finalisation of trading license applications after receipt of all clarifications and information.

Wherever there are Regulatory Commissions, they may be appointed as the agency to regulate and monitor the trading market and the trading licensees. The agencies shall try to constitute separate market monitoring cells for regular market oversight. The legal framework should make it the duty of the market oversight agency to develop a well-defined market oversight procedure, which shall at the minimum include:

- **Formats for regular reporting of transactions by the licensees**  
The licensees shall be made liable to file reports in pre-defined format regarding the volume, buyer, seller and trading margin related to each of their transactions.  
This allows the regulatory commissions to ascertain that there is no abuse of market power and violation of any stipulations on trading margin by any of the licensees.
- **Penalties for failure to file information within the prescribed time**  
In case any of the licensees continuously default in filing and publishing of information on time, the regulatory commission shall be empowered to impose commercial penalties. The amount of penalty may be determined by the individual regulatory commissions.
- **Power to conduct investigations against a licensee / a group of licensees**  
The regulatory commission, including any officers to which the commission has delegated the powers, shall be empowered to conduct investigations against a licensee / group of licensees, including the right to access the office premises of the licensee, right to access and seize the records and documents maintained by the licensee, and the right to question officers of the licensee.  
Such powers are required in the event any allegation of market abuse / regulatory violation against any of the licensees needs to be investigated.
- **Incentives to licensees to institutionalize compliance programs and self-reporting (of violations)**  
The licensees shall be encouraged to institutionalize compliance programs and self-reporting, wherein if any violation of regulatory provisions are identified, there is an incentive for the licensees to honestly report it to the regulatory commission rather than trying to suppress it. This is typically done by awarding a slightly lower penalty, if the violation is identified through self-reporting rather than through investigations made by the regulatory commission.  
The rationale behind such a scheme is that, without such an incentive, licensees may continue to suppress the adverse information, as there are no additional penalties for such suppression.
- **Provision to make public, power trade transaction details up to a minimum level of detail**  
While the entire report on transactions shall be filed with the regulatory commission, the report excluding commercially sensitive information shall also be hosted by the licensees on their websites. The licensees shall be required to host the information pertaining to the last 12 months in their websites.  
This provisions improves transparency and allows the other stakeholders in the sector to analyze and verify that there is no abuse of market power by the traders.

The legal framework shall clearly provide for emergency provisions for exceptional circumstances, wherein the Regulatory commission / Government can control / restrict the trading activities, including, but not limited to:

- Curtailment of trading transactions
- Imposition of trading margin cap / ceiling (*separately for domestic and cross border trade, with the margin ceiling for cross border trade set higher than that for domestic trade*)
- Temporary cap on market prices for purchase and resale of electricity

## **Guideline 2: Extending / applying the trading license framework in the context of cross border trade**

### **A. Current practice in South Asia**

In South Asia, even in the case of India, legal and regulatory framework for cross border trading through trading licensees is yet evolving. The Guidelines for Cross Border trade, finalised by the Government of India is currently being used as the basic building block for the proposed regulations on cross border trade by the CERC.

In some of the other South Asian countries such as Bhutan, there is provision of import and export licensees. However, such provisions seem to cater to cross border trade by generation companies, and import by the distribution utility instead of catering to transactions involving resale.

### **B. International Experience**

In case of South Africa Power Pool, RERA's guidelines and SAPP requirements stipulate that any entity that is authorized to undertake cross-border trade can participate in the SAPP market. RERA's guidelines stipulate that subject to national legal requirements, the Regulator at national level will issue licenses for importing and exporting activities for cross border power trading

An alternative model is also available (Regional Energy Market Regulations of Central American Interconnection System) wherein the application for cross border trade authorization may be submitted through the system / market operator at the country level to the regional level regulator and system operator. However this mechanism can work only when treaty mechanisms are in place to set up regional level regulatory commissions and system operators.

Central American Interconnection System's Regional Energy Market Transitional Regulations point to the concept of having simple transitional mechanisms in the initial phase of cross border trade. This will be important especially in case of non-compatibility in regulations of participating nations in cross border trade. While the transition mechanism is in place, efforts may be made for regulatory harmonization and development of final mechanisms for cross border trade.

### **C. Relevance of the guideline**

Without an explicit authorization process, there might be a scenario that all traders are allowed to indulge in CBET too, which shall not be the case. Trading licensees who are allowed to indulge in CBET shall be credit worthy, and shall have an established track record, so as to reduce the chances for disputes between entities of different countries. At the same time, having a separate licensing process for cross border trade will be a duplication of processes and wastage of time. Therefore a balanced framework for providing authorization for cross border trade needs to be evolved.

### **D. Recommendations for South Asia**

The legal definition for trading may be amended to include cross border trade. If this is not feasible, a separate provision may be added in the laws, to allow the trading licensees to indulge in cross border trade. This shall be done along with the addition of a new provision in legislative / regulatory framework that shall specify that authorization for indulging in cross

border trade shall be granted to trading licensees subject to regulations, rules and procedures framed in this regard.

The entity that currently grants generation, transmission and distribution licenses in the respective SA countries may be entrusted with the duty to grant trading license, and the duty to grant authorization for indulging in cross border trade.

The Government / Government designated agencies may be provided with the power to over-rule any proposal for grant of authorization for indulging in cross border trade to any entity.

In case of trading licenses which have been already granted, wherein the area of trading is defined in the license as the territorial limits of the country, amendment of license terms may be undertaken to allow cross border trade, subject to obtaining authorization for cross border trade.

In case of countries with no regulatory framework for trading licensees, they may be allowed a transitionary arrangement in which authorization for cross border trade can directly be given, subject to trading activities being limited to CBET, with no trading within the country.

### **Guideline 3: Categories of trading licensees and qualification criteria**

#### **A. Current practice in South Asia**

Only in case of India, a well-developed framework for trading licensees are available, which also specifies the different categories of trading licensees, based on the envisaged annual trading volume. The annual license fee is also linked to the annual trading volume.

The qualification criteria has been divided into two – Technical and financial. Technical criteria refer to the availability of trained manpower for conducting trading operations. Financial criteria refers to the conditions of minimum net-worth (linked to the trading licence category) and minimum current ratio and liquidity ratio of 1:1.

#### **B. International Experience**

In the United States of America, segregation of power traders are done based on their market power (Category 1 and 2 wholesalers in USA), with lesser reporting requirements in the case of traders who do not have any market power. This allows the regulator to focus on the section of traders who are most likely to effectively indulge in unfair practices.

#### **C. Relevance of the guidelines**

The qualification criteria for trading licensees is a key decision point. In terms of technical criteria, a trader should have:

- ability to understand the market and operations of the system
- ability to conduct commercial transactions
- ability to communicate with the business partners, Appropriate Commission and the system operators

This translates to the availability of qualified technical personnel for conducting trading, and the availability of requisite software and hardware systems. Similarly, persons who have commercial knowledge of the market and experts in financial accounting also needs to be available.

The traders will also need to share information and communicate with utilities, SLDC, RLDC etc. This will require communication links to be set up.

In terms of financial qualification, the key concern is that unlike other electricity business, traders have very low asset base in comparison to their accounts payable and receivables. Therefore financial qualification criteria needs to be set in such a way that there is no concern regarding the financial situation of the trader. This translates to the requirement that the trader should have sufficient capital employed to cover the credit and default risk.

#### D. Recommendations for South Asia

An annual trading volume based categorization of licensees, as is the case with India, may be adopted, with only the highest category of trader being allowed to indulge in cross border trade.

| Categorization of trading licensees followed in India* |                                  |    |
|--------------------------------------------------------|----------------------------------|----|
| Category I                                             | No limit                         | 50 |
| Category II                                            | Not more than 1500 Million units | 15 |
| Category III                                           | Not more than 500 Million units  | 5  |
| Category IV                                            | Not more than 100 Million units  | 1  |

\* This is provided merely as an illustration. Each South Asian country will have to take a proportionately reduced scale of volume and networth specification, as the above values have been derived for India's power market.

In case of technical criteria, the following aspects may be prescribed:

- Availability of qualified technical personnel for conducting trading  
The licensee shall have at least two engineers with post-graduation in electrical engineering / power systems under its full time employment, with a minimum experience of ten years in power sector.
- Availability of qualified financial personnel for conducting trading  
The licensee shall have at least two qualified Chartered Accountants and MBA professionals, with minimum experience of 5 years in the power sector, who can take care of the financial accounting and commercial aspects.
- Availability of software and hardware systems for trading  
The licensee shall have web based portals for use by the buyers and sellers as part of trading operations and / or management information system.  
The licensee shall have installed communication systems, if required under grid code / other relevant technical standards.

In case of financial criteria, the following aspects may be prescribed:

- Minimum net-worth criteria, based on annual trading volume
- Minimum 1:1 current ratio and liquidity ratio  
The financial criteria may be calculated either with the latest audited financial accounts / based on special audited balance sheet prepared in the recent time period. The aim of financial criteria is to ensure that the traders remain strong and solvent, and capable to meet their payment commitments towards utilities, system operators, and sellers. For ascertaining the same, the capital employed by the traders is compared against their current liability and fixed liability.

The financial criteria may be kept at a higher level for obtaining authorization for cross border trade, such as 200% of the net-worth requirements of a Category I licensee.

## Notes:

### Definition of net-worth, current ratio and liquidity ratio

- “**net worth**” means aggregate value of the paid up equity capital and free reserves (excluding reserves created out of revaluation) reduced by the aggregate value of accumulated losses, deferred expenditure (including miscellaneous expenses) not written off and loans and advances to the associates;
- $\text{net worth} = \{\text{paid up equity capital and free reserves (excluding reserves created out of revaluation)}\} - \{\text{accumulated losses} + \text{deferred expenditure (including miscellaneous expenses) not written off} + \text{loans and advances to the associates}\}$
- “**liquidity ratio**” means the ratio between the liquid assets and current liabilities:

$$\text{Liquidity ratio} = \frac{\text{liquid assets}}{\text{current liabilities}} \quad \frac{\text{liquid assets}}{\text{current liabilities}}$$

where

- liquid assets include the current assets less inventory, and
- current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;
- “current ratio” means ratio between the current assets and current liabilities:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \quad \frac{\text{current assets}}{\text{current liabilities}}$$

where

- current assets include cash or cash equivalent of money, accounts receivables, inventory, marketable securities, and pre-paid expenses, and
- current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;

### Definition of Special balance sheet

A special balance sheet is prepared for a date, which falls within 60 days prior to the submission of application for grant of trading license. This is required to be furnished, with certification by the applicant's Chartered Accountant as the basis for financial qualification.

### Guideline 4: Grant and revocation of trading licence

#### A. Current practice in South Asia

Only in case of India, a well-developed framework for trading licensees are available, which also specifies the procedure for grant and revocation of trading licence. These include:

- Application procedure for grant of licence
- Publication of application for comments and objections
- Scrutiny of application for grant of licence by regulator
- Requirements for grant of licence
- License format
- Procedure to apply for revocation (initiated by licensee)
- Procedure to initiate revocation proceedings by the regulator (suo-motu / based on any complaints)
- Publication of revocation proposal for comments and objections
- Preconditions for licence revocation

In case of other countries, only generic clauses pertaining to grant and revocation of licenses, applicable to all category of licensees are available.

## B. International Experience

International experience shows that notifying a properly defined process for scrutiny of trading license applications, identifying the key stakeholders and listing key timelines and milestones will enable a streamlined process for grant / amendment / revocation of licenses. Apart from India, this aspect has also been witnessed in the case of power trading framework in South Africa, United States of America, and Central American Interconnection.

## C. Relevance of the guidelines

Defining the procedure for grant of license is crucial as it reduces subjectivity in the regulatory process. The procedure typically consists of receiving application for grant of license, initial scrutiny of license application, inviting comments from public and other stakeholders, demanding additional information and explanations from the applicant, detailed scrutiny of application in terms of eligibility requirement, and decision to approve / deny the request for grant of license.

## D. Recommendations for South Asia

Regulatory framework for grant of license shall at the minimum consist of the following.

| Clause                                                                                       | Description                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification of the authority which will scrutinize licence application and grant licenses | Either the Regulatory Commission or in its absence, the relevant Ministry / Government Department may be identified as the licensing authority.                                                                                                                                   |
| Application procedure for grant of licence                                                   | Sample application form provided in Annexure 2<br>Copies of relevant documents such as that of company registration, annual audited accounts etc. may also be collected.<br>Maximum timeline for processing of application at various stages to be specified.                     |
| License Application Fee                                                                      | May be determined by the Regulatory Commission or in its absence the relevant Ministry / Government Department.                                                                                                                                                                   |
| Publication of application for comments and objections                                       | Minimum number of newspapers and websites to publish summary, sample summary format, online publication of full set of documents, time for receipt of comments, time for furnishing reply by the applicant to be specified                                                        |
| Scrutiny of application for grant of licence                                                 | Timeline for scrutiny to be specified.<br>The authority conducting scrutiny may be empowered to ask for additional information and additional documents, if necessary.<br>A public hearing may be provided before the final decision to approve / reject the license application. |
| Requirements for grant of licence                                                            | Provided in Guideline 3                                                                                                                                                                                                                                                           |
| License format                                                                               | Sample provided in Annexure 2                                                                                                                                                                                                                                                     |
| Other clauses                                                                                | Clearance from relevant ministries in case the applicant company has foreign ownership, may be made necessary.                                                                                                                                                                    |

For renewal and amendment of license, the same clauses with minor changes may be made applicable. ‘

Regulatory framework for amendment / revocation of license shall at the minimum consist of the following.

| Clause                                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure to apply for revocation (initiated by licensee)                                          | Similar to procedure for grant of licence                                                                                                                                                                                                                                                                                                                                                                      |
| Procedure to initiate revocation proceedings by the regulator (suo-motu / based on any complaints) | Similar to procedure for grant of licence, except for the fact that there will be no separate application made by the licensee.                                                                                                                                                                                                                                                                                |
| Publication of revocation proposal for comments and objections                                     | Similar to procedure for grant of licence                                                                                                                                                                                                                                                                                                                                                                      |
| Preconditions for licence revocation                                                               | <p>In case the revocation is requested by the applicant, the same may be allowed only after existing dues are cleared, and the applicant gives a sworn affidavit that it has terminated all its future commitments / contracts for trading.</p> <p>In case the revocation is not requested by the applicant, transition period after which revocation will come into effect may be specified, if required.</p> |

## **Guideline 5: Terms, conditions and obligations of trading licensees**

### **A. Current practice in South Asia**

Only in case of India, a well-developed framework for trading licensees are available, which also specifies terms, conditions and obligations of trading licensees. These include:

- Validity period of license
- Geographical coverage
- Reporting requirements
- Payment of annual license fee
- Requirements for maintaining validity of license etc.

In case of other countries, only the terms, conditions and obligations common to all category of licensees are available.

### **B. International Experience**

In South Africa, as per section 14 of the Electricity Regulation Act 4 of 2006, the Regulator may specify licence conditions such as information reporting, price approval, performance targets, restrictions etc. As per Section 18 of the Act, In case of allegations of contravention of licence condition or provisions of the Act by the licensee, the Regulator may sit as a tribunal to decide on the allegation.

Trading business requires continuous market monitoring and oversight on the part of the regulatory commissions, which may be enabled through mechanisms for periodic information dissemination and reporting. In the United States, information reporting is done by online filing using FERC's systems. Wherever spreadsheet models are to be submitted, it is required to submit workable spreadsheet models.

FERC in the US also provides incentives to power traders to institute compliance programs, to promote self-reporting of violations and to extend support to investigative agencies. (FERC's penalty guidelines with defined credits on overall culpability score for compliance, self-reporting and support)

### **C. Relevance of the guidelines**

The terms, conditions and obligations become important, as the regulatory commissions cannot be expected to continuously monitor the activities of the trading licensees. Under such scenarios, the terms, conditions and obligations becomes the guiding criteria for licensees to follow, and the reference criteria for regulatory commissions to check against the performance of the trading licensees.

The terms, conditions and obligations of the trading licensees also become important due to the role played by them in the market, as a risk intermediary and as an entity with influence on market prices. As the trading price itself is unregulated, regular reporting and information furnishing becomes a key obligation imposed by the regulatory authorities on the trading licensees. Meanwhile, their role as a risk intermediary in transactions requires safeguards to ensure that they continue their operations. This is ensured through obligation to continue conducting trading and to maintain the eligibility requirements for the particular category of trading license.

The terms and conditions also requires the regulatory authorities to assume more powers under emergency situations, including inspecting the records of the licensee, controlling trading prices and trading margin, and giving directions to control / curtail trading activities. The importance of such emergency provisions were well established during events such as the California energy crisis of 2000 - 2001.

### **D. Recommendations for South Asia**

The terms and conditions for trading licensees shall at the minimum consist of:

- Validity of licence  
Typically 25 years or more.
- Geographical coverage  
Typically common to the geographical jurisdiction of the regulatory commission.
- Compliance requirements for maintaining the validity of licence  
Usually linked to the terms and conditions and obligations.

The obligations for trading licensees shall at the minimum consist of:

- Payment of annual license fee
- Payment of open access fees, charges and security deposits as required under open access regulations
- Regular reporting of transactions in the prescribed format
- Comply with price control and other emergency provisions, if any (curtailment of trading transactions, cap on trading margin etc.)
- Comply with planning and technical codes.
- Co-operate with the regulatory commissions during investigations
- Furnishing of information, as and when demanded by the regulatory commissions

The annual license fee for each category of licensee may be specified based on a percentage of a market reflective index, for example, 1% of anticipated trade turnover, at previous years' average per unit sale price of trading licensees. (The average sale price is expected to be

available from the regular reporting formats submitted by the licensees to the regulatory authority):

| Category of the Trading Licence                  | Volume of electricity proposed to be traded in a year * | Annual trading license fee                                         |
|--------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------|
| Category I with cross border trade authorization | No limit                                                | 2% * 200 MU * Per unit average trading sale price of previous year |
| Category I                                       | No limit                                                | 1% * 200 MU * Per unit average trading sale price of previous year |
| Category II                                      | Not more than 150 Million units                         | 1% * 150 MU * Per unit average trading sale price of previous year |
| Category III                                     | Not more than 50 Million units                          | 1% * 50 MU * Per unit average trading sale price of previous year  |
| Category IV                                      | Not more than 10 Million units                          | 1% * 10 MU * Per unit average trading sale price of previous year  |

\* Volume limits are indicative.

Each country may set the limits in line with their estimated market size for trading.

As can be seen above, it is important to fix a higher level of charges for the licensees who have authorization for cross border trade, considering the additional costs for regulatory harmonization and the probable additional margins achieved on account of cross border trade.

In addition, the following best practices from other countries may also be adopted as part of terms, conditions and obligations:

- Trading licensees may be encouraged to undertake prudent practices such as institutionalization of compliance programs, and providing options for self-reporting. Such encouragement may be provided by specifying discounts on penalties, which would have been incurred otherwise, or in any other manner as the respective regulatory may deem to be fit.
- Licensees may be required to furnish information required under the reporting and monitoring framework to be only in text converted to PDF format / workable spreadsheet models so as to ensure that the information is legible and that calculations can be repeated and verified.

## Guideline 6: Market development

### A. Current practice in South Asia

Enabling market conditions for power traders are not present in many of the South Asian countries. Transmission open access, which is a necessary condition for trading market, has not yet evolved in Afghanistan, Nepal, Maldives and Sri Lanka. The presence of vertically integrated monopoly in Afghanistan is expected to be another barrier in the institutionalization of trading license regime.

### B. International Experience

Power market should have progressed from vertical monopoly / single buyer model to whole sale competition, allowing trading licensees to source power from IPPs and other sources for further re-sale. The necessity of this condition is evidenced especially in the case of South

Africa wherein, an executive order mandating all purchases to be done by the Government owned monopoly – Eskom is stifling the growth of trading industry.

### **C. Relevance of the guideline**

In the absence of transmission open access, trading licensees are effectively prevented from market participation, as access to the transmission network is denied for trading transactions.

The presence of vertically integrated monopoly in Afghanistan is expected to be another barrier in the institutionalization of trading license regime. The vertically integrated monopolies typically have a conflict of interest when dealing with trading licensees, especially with regard to allowing transmission open access and conducting system operation. To ensure that the monopoly utilities do not act in a biased manner against market participants such as trading licensees, it is important to have at least the transmission and system operation functions unbundled from the vertically integrated utility.

### **D. Recommendations for South Asia**

The power market structure shall not be solely reliant on single buyer model / vertical monopoly. Third party entities such as traders shall be allowed to purchase and resell energy.

The respective countries shall also evolve and operationalize transmission open access, in such a way that trading licensees can make use of the same for domestic and cross border power trade. Institutional, legal, regulatory and operational framework for open access will need to be put in place.

## **Guideline 7: Encouraging regional mechanisms for co-ordination in CBET**

### **A. Current practice in South Asia**

In South Asia, currently there is no established forum of electricity regulators at the regional level. In fact, in the energy sector, there are very few regional bodies such as SAARC Energy Secretariat.

Within India, there is a Forum of Regulators, which consists of both National and State level Regulatory Commission. The Forum of Regulators meet regularly, and issue non-binding recommendations and Model Regulations, that can be adopted by the respective regulatory commission after necessary customizations.

### **B. International Experience**

In regional power pools, in case of presence of regional regulator, such entities may undertake efforts for regulatory harmonization and indulge in dispute resolution related to cross-border trade.

There are regional level regulatory forums in case of Central American Interconnection System (CRIE) and South African Power Pool (RERA).

The existence of a Regional Electricity Regulator (instead of a forum of regulators), with legal mandate on issues related to cross border trading across the region can be a key enabler for harmonization of trading licence regimes across regions. In the West African region, such a regional regulatory - ECOWAS Regional Electricity Regulatory Authority (ERERA) was established by the member states of the Economic Community of West African States (ECOWAS) in January 2008.

### **C. Relevance of the guideline**

In regional power pools, the presence of regional regulator / a regional regulatory forum makes it easier to undertake efforts for regulatory harmonization and indulge in dispute resolution

related to cross-border trade. In the South Asian context, especially considering the political context, a regional regulatory forum of national electricity regulatory will be more preferred than a separate, new regional entity. Till a new body is set up, co-ordination efforts under existing forums and periodic meetings may also be undertaken.

#### **D. Recommendations for South Asia**

To enable smooth functioning of cross border trade through trading licensees, regular co-ordination at regional level may be required, with regard to:

- Making efforts for Regulatory harmonization
- Providing a forum for consultations to evolve policies and model regulations
- Supporting the efforts for improvement in competition and choice

For these purposes, there may be efforts in the future for constitution of various relevant forums of regulators, system operators etc. at the regional level. As the operations of such forums are crucial for smooth operation of CBET, the South Asian countries may strive to give their co-operation and support in the operationalization of such regional forums for collaboration in CBET.

Till permanent forums are set-up, transitional arrangements may be adopted such as annual meeting of national level regulatory commissions of SAC.

## Annexure II – Illustrative sample formats

### Application form for grant of licence

The following sample application for grant of license is mostly based on the formats adopted in India, by CERC.

| No. | Particulars                                                                                                                                    | Details |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1.  | Name of the applicant                                                                                                                          |         |
| 2.  | Address                                                                                                                                        |         |
|     | (a) Registered office address                                                                                                                  |         |
| s   | (b) Address for correspondence                                                                                                                 |         |
|     | (c) Website address                                                                                                                            |         |
| 3.. | Name, Designation and Address of the contact person                                                                                            |         |
| 4.  | Contact Telephone numbers                                                                                                                      |         |
| 5.  | E-mail ID                                                                                                                                      |         |
| 6.  | Status of the applicant (Citizen / type of firm)                                                                                               |         |
| 7.. | Place of Incorporation/Registration                                                                                                            |         |
| 8.  | Year of Incorporation/Registration                                                                                                             |         |
| 9.  | Clause of the Memorandum of Association / any similar legally valid incorporation document which authorizes undertaking trading in electricity |         |
| 10. | Whether the Memorandum of Association / any similar legally valid incorporation document authorizes undertaking transmission of electricity.   |         |
| 11. | Share Capital                                                                                                                                  |         |
|     | (a) Authorized share capital                                                                                                                   |         |
|     | (b) Issued share capital                                                                                                                       |         |
|     | (c) Subscribed share capital                                                                                                                   |         |
|     | (d) Paid up share capital                                                                                                                      |         |
| 12. | Category of licence applied for                                                                                                                |         |
| 13. | Whether authorization for cross border trade is required                                                                                       |         |
| 14. | Volume of power intended to be traded in each year (in Million Units)                                                                          |         |
| 15. | Area of Trading                                                                                                                                |         |
| 16. | (i) Net worth as per the last year's audited accounts prior to the date of application                                                         |         |
|     | (ii) Net worth* on the date of preparation of the special balance sheet ** accompanying the application                                        |         |
| 17. | (i) Current Ratio* as per the last year's audited accounts prior to the date of application.                                                   |         |
|     | (ii) Current ratio on the date of preparation of the special balance sheet accompanying the application.                                       |         |
| 18. | (i) Liquidity Ratio* as per the last year's audited accounts prior to the date of application.                                                 |         |
|     | (ii) Liquidity ratio on the date of preparation of the special balance sheet accompanying the application.                                     |         |
| 19. | Details of shareholding as on the date of making application                                                                                   |         |
| 20. | (i) Annual turnover as per the audited accounts for the past one year prior to the date of application (if applicable).                        |         |

| No. | Particulars                                                                                                                                                                                                                                                                                                                                                                                    | Details |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|     | (ii) Turnover on the date of preparation of the special balance sheet accompanying the application.                                                                                                                                                                                                                                                                                            |         |
| 21. | Organizational and Managerial capability of the applicant                                                                                                                                                                                                                                                                                                                                      |         |
| 22. | Approach and Methodology for the trading business                                                                                                                                                                                                                                                                                                                                              |         |
| 23. | Other Information                                                                                                                                                                                                                                                                                                                                                                              |         |
| (a) | Whether the applicant or any of his associates, or partners, or promoters, or Directors has been declared insolvent? If so, the details thereof and whether they have been discharged for not;                                                                                                                                                                                                 |         |
| (b) | Details of cases resulting in conviction for moral turpitude, fraud or economic offences of the applicant, any of his associates, or partners, or promoters, or Directors during the year of making the application and three years immediately preceding the year of making application and the date of release of the above person from imprisonment, if any, consequent to such conviction; |         |
| (c) | Whether the applicant or any of his associates, or partners, or promoters, or Directors was ever refused licence. If so, give the details of date of making application, date of refusal and reasons for refusal;                                                                                                                                                                              |         |
| (d) | Whether the applicant holds a transmission licence. If so, give the details thereof;                                                                                                                                                                                                                                                                                                           |         |
| (e) | Whether an order canceling the licence of the applicant or any of his associates, or partners, or promoters, or Directors was ever passed;                                                                                                                                                                                                                                                     |         |
| (f) | Whether the applicant or any of his associates, or partners, or promoter, or Directors was ever found guilty of contravention of any of the provisions of the Act or the rules or the regulations made thereunder or an order made by the Electricity Regulatory Commission, in any proceedings. If so, give the details thereof.                                                              |         |
| 24. | List of Documents Enclosed                                                                                                                                                                                                                                                                                                                                                                     |         |
|     | Annexure 1: Clause from MOA Authorizing Undertaking of Trading of Electricity Business                                                                                                                                                                                                                                                                                                         |         |
|     | Annexure 2: Certificate of Incorporation                                                                                                                                                                                                                                                                                                                                                       |         |
|     | Annexure 3: Memorandum of Association                                                                                                                                                                                                                                                                                                                                                          |         |
|     | Annexure 4: Articles of Association                                                                                                                                                                                                                                                                                                                                                            |         |
|     | Annexure 5: Power of Attorney authorizing the signatory to apply for license                                                                                                                                                                                                                                                                                                                   |         |
|     | Annexure 6: Net worth Certificate, certified by Chartered Accountant                                                                                                                                                                                                                                                                                                                           |         |
|     | Annexure 7: Current & Liquidity Ratio Certificate, certified by Chartered Accountant                                                                                                                                                                                                                                                                                                           |         |
|     | Annexure 8: Certified Audited Accounts                                                                                                                                                                                                                                                                                                                                                         |         |
|     | Annexure 9: Shareholding Pattern, certified by Chartered Accountant                                                                                                                                                                                                                                                                                                                            |         |
|     | Annexure 10: Organizational Capabilities                                                                                                                                                                                                                                                                                                                                                       |         |
|     | Annexure 11: Approach & Methodology                                                                                                                                                                                                                                                                                                                                                            |         |
|     | Annexure 12: Details of Payment of Application Fees                                                                                                                                                                                                                                                                                                                                            |         |

## Notes:

\* Definition of net-worth, current ratio and liquidity ratio

- “**net worth**” means aggregate value of the paid up equity capital and free reserves (excluding reserves created out of revaluation) reduced by the aggregate value of accumulated losses, deferred expenditure (including miscellaneous expenses) not written off and loans and advances to the associates;

net worth = {paid up equity capital and free reserves (excluding reserves created out of revaluation)} – {accumulated losses + deferred expenditure (including miscellaneous expenses) not written off + loans and advances to the associates}

- “**liquidity ratio**” means the ratio between the liquid assets and current liabilities:

$$\text{Liquidity ratio} = \frac{\text{liquid assets}}{\text{current liabilities}} \quad \frac{\text{liquid assets}}{\text{current liabilities}}$$

where

- liquid assets include the current assets less inventory, and
- current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;

- ▪ “**current ratio**” means ratio between the current assets and current liabilities:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \quad \frac{\text{current assets}}{\text{current liabilities}}$$

where

- current assets include cash or cash equivalent of money, accounts receivables, inventory, marketable securities, and pre-paid expenses, and
- current liabilities include sundry creditors, provisions and other liabilities to be discharged within a period of one year;

## **\*\* Special balance sheet**

*A special balance sheet is prepared for a date, which falls within 60 days prior to the submission of application for grant of trading license. This is required to be furnished, with certification by the applicant’s Chartered Accountant as the basis for financial qualification.*

## **Trading licence**

*A sample format for trading license, mainly based on the format adopted in India by CERC, with minor modifications to accommodate cross border trade, is provided below.*

<<Name of authority granting the license>>

## License to trade in electricity as an electricity trader

**License No:**

**Date:**

1. The <<authority>>, in exercise of the powers conferred under Section <<section number>> of the <<Name of relevant legislation>>, hereby grants this license as a Category <<Category code / number>> trader to <<Name of licensee>> to trade in electricity as an electricity trader in the whole of <<Country name>>, subject to the terms and conditions contained in the <<Relevant legislations and regulations>>, including statutory amendments, alterations, modifications, re-enactments thereof, which shall be read as part and parcel of this license.
2. The <<authority>> hereby also confers its authorization to <<Name of licensee>> to indulge in cross border trade, subject to the terms and conditions contained in the <<Relevant legislations and regulations>>, including statutory amendments, alterations, modifications, re-enactments thereof, which shall be read as part and parcel of this license. **(Remove if not applicable)**
3. The licensee shall abide by the measures for control of prices, trading margin and any other restrictions imposed by the <<authority>>.
4. The license is not transferable, except in accordance with the provisions of the <<Relevant legislations, regulations and rules>>
5. The licensee shall not, without the prior approval of the <<authority>>-
  - a. Undertake any transaction to acquire by purchase or take over or otherwise, the utility of any other licensee; or
  - b. Merge its utility with other licensee.
  - c. Assign its license, or transfer its utility, or any part thereof, by sale, lease, exchange or otherwise
6. Any agreements relating to any transaction referred to in the previous clause/unless made with the approval of the <<authority>>, shall be void.
7. The grant of this license to the licensee shall not in any way hinder or restrict the right of the <<authority>> to grant a license to any other person within the same area for trading in electricity as an electricity trader. The licensee shall not claim any exclusivity.
8. This license shall commence on the date of its issue and unless revoked earlier, shall continue to be in force for a period of <<number of years>> years from the date of its issue.
9. The licensee may with prior intimation to the Commission, engage in any business for optimum utilization of its assets;
10. Provided that the licensee shall not engage in the business of transmission of electricity.
11. The licensee shall pay annual license fee, as specified by the <<authority>>. License fee for part of the financial year shall be paid on pro rata basis.
12. The licensee shall supply such information and documents as may be called for by the <<authority>> from time to time.

Signature of authorized signatory

## Trading licensee register

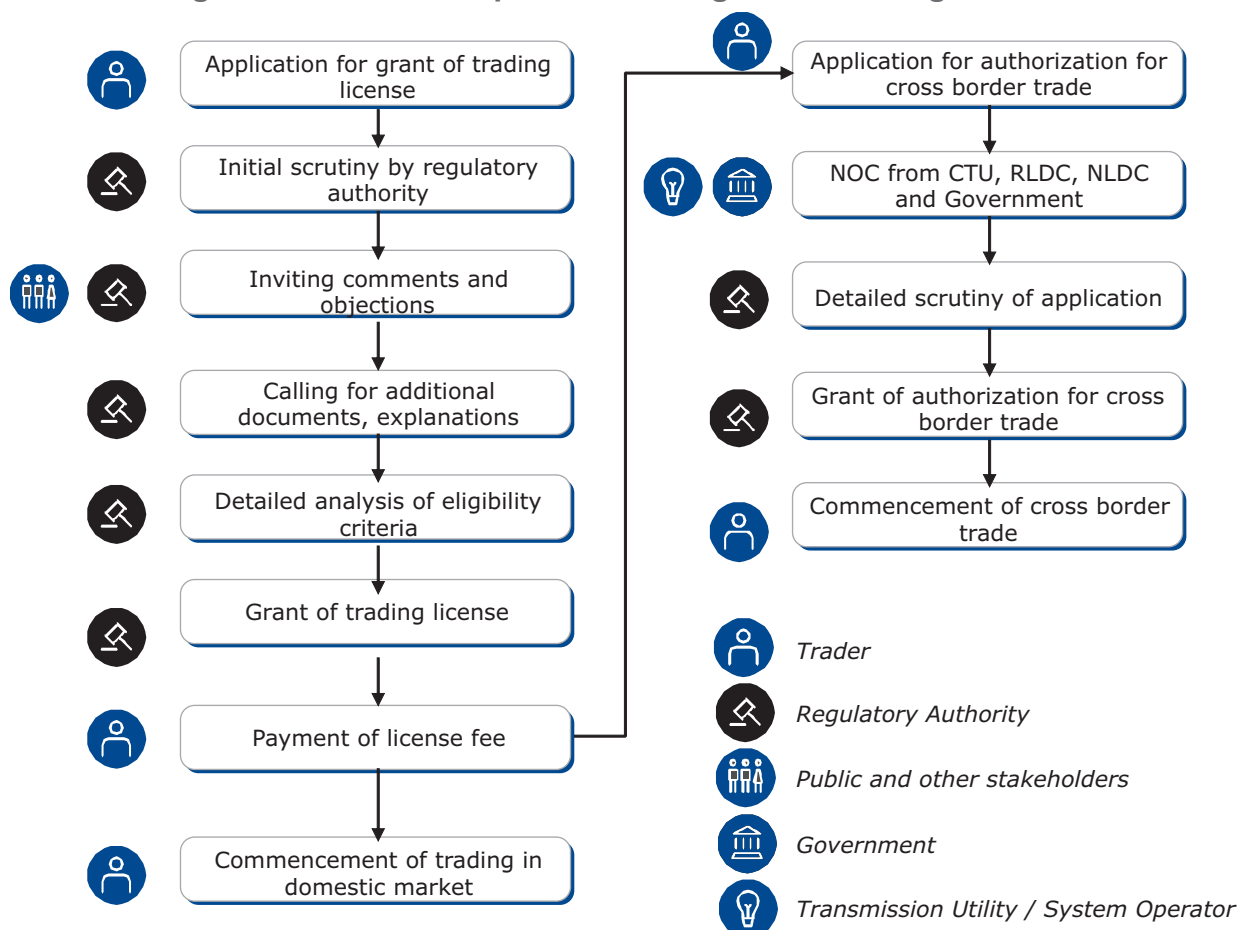
The following fields, at the minimum may be captured, updated periodically and displayed as a consolidated “Trading Licensee Register” in the website of the regulator / concerned ministry. The presence of such a consolidated database will help the trading counterparties to assess the trustworthiness and track-record of the trading licensees, before entering into agreement for trading.

| No. | Field Name                                                                           |
|-----|--------------------------------------------------------------------------------------|
| 1   | Licensee Name                                                                        |
| 2   | Licensee’s address and contact details                                               |
| 3   | License number and date                                                              |
| 4   | License category                                                                     |
| 5   | Licensee’s authorization for indulging in cross border trade                         |
| 6   | Order reference number and date of grant of license                                  |
| 7   | Order reference numbers and date of all subsequent amendment / revocation of license |
| 8   | Order reference number and date of any penalties imposed on the licensee so-far      |

## Annexure III – Illustrative procedure for grant of trading license

Based on the model framework and guidelines, a sample illustration of procedure for grant of trading license for the promotion of CBET is provided below. However, the respective South Asian countries may modify it to suit their local requirements.

**Figure 26: Illustrative procedure for grant of trading license**



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## About SARI/EI

Over the past decade, USAID'S South Asia Regional Initiative /Energy (SARI/E) has been advocating energy cooperation in south Asia via regional energy integration and cross- border electricity trade in eight south Asian countries(Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka). This fourth and the final phase, titled South Asia Regional Initiative for Energy Integration(SARI/EI), was launched in 2012 and is implemented in partnership with Integrated Research and Action for Development (IRADe) through a cooperative agreement with USAID. SARI/EI addresses policy, legal, and regulatory issues related to cross-border electricity trade in the region, promotes transmission interconnection, and works toward establishing a regional market exchange for electricity.

## About USAID

The united states Agency for international Development(USAID) is an independent government agency that provides economics, development and humanitarian assistance around the world in support of the foreign policy goals of the united states. USAID's mission is to advance broad-based economics growth, democracy, and human progress in developing countries and emerging economies. To do so, it is partnering with governments and other actors, making innovative use of science, technology, and human capital to bring the profound results to a greatest number of people.

## About IRADe

IRADe is a fully autonomous advanced research institute, which aims to conduct research and policy analysis and connect various stakeholder including government, non-governmental organizations (NGOs) corporations, and academic and financial institutions. Its research covers many areas such as energy and power systems, urban development, climates change and environment, poverty alleviation and gender, food security and agriculture, as well as the policies that affect these areas.

For more information on the South Asia Regional  
Initiative for Energy Integration (SARI/EI) program,  
please visit the project website:

[www.sari-energy.org](http://www.sari-energy.org)

